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ABSTRACT

This volume deals with the issue of schools and delinquency and contains three major articles. "American Education: American Delinquency" (Gary D. Gottfredson) reviews the documentation for the successes and failures of American education as it has import for the generation and/or control of law violations of youth. It explains how families, neighborhoods, communities, and the established social order combine to determine the fate of educational efforts. "Schools and Delinquency Prevention" (David P. Farrington) responds to Gottfredson's analysis with general agreement but presents reasoned reservations about Gottfredson's thesis that the school offers more promise for delinquency prevention than does the family, the peer group, and the juvenile justice system. "Examining the Potential of Delinquency Prevention through Alternative Education" (Denise C. Gottfredson) presents an inclusive analysis of the results produced by evaluations of alternative school programs. (NB)

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Foreword

We are pleased to present Volume 6 of Today's Delinquent. The subject matter of this issue is schools and delinquency.

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Preface

School, from the little red schoolhouse to blackboard jungle to sweathogs and magnet school, has long been a standard part of our explanation of the phenomenon we commonly label "juvenile delinquency." Historically we have alternated in our view of whether school is a cause of—or a cure for—youthful crime. Lately, especially during the past two decades, we have tended to view school as a social institution, with infinite but largely unrealized potential to impart knowledge and character for our children.

In this issue of Volume 6 of *Today's Delinquent*, Gary Gottfredson conducts a penetrating review of the documentation for the successes and failures of American education as it has import for the generation and/or control of law violations of youth. Along the way, he also paints a compelling picture of the manner in which families, neighborhoods, communities, and the established social order combine to determine the fate of educational efforts.

David Farrington responds to Gottfredson's analysis with general agreement but presents reasoned reservations about Gottfredson's thesis that the school offers more promise for delinquency prevention than the family, the peer group, and the juvenile justice system.

Denise Gottfredson presents a much-needed and incisive analysis of the results produced by evaluations of alternative school programs. Her paper should be especially useful to those who may be contemplating establishment of alternative schools as a delinquency-control mechanism.

This, the sixth volume of *Today's Delinquent*, is an especially valuable reference for anyone who thinks that school is an important variable in the delinquency equation.

Hunter Hurst

American Education:
American Delinquency

Gary D. Gottfredson

When one compares the young men whose repeated misbehavior brings them before the court with young men who avoid this distinction, the former group is characterized on the average by less academic competence, more unsavory companions, unsalutary family backgrounds, greater tendency to seek excitement and behave impulsively, and more ready predispositions to reject conventional social rules. **Moreover, the more delinquent adolescents are apt to dislike school, be troublesome in school, have limited career objectives, dislike their parents, drink, smoke, absent themselves from school, and use illegal drugs.** Their siblings and parents often share some of these distinctions as well. This generalization holds, as far as can be determined, in communities of all types (see West and Farrington, 1975; Hirschi, 1969; Hirschi and Hindelang, 1977; Hindelang, 1973; Gottfredson, 1982; Jessor and Jessor, 1977; and Loeber and Dishion, 1983).

Communities with especially high rates of crime and delinquency also **tend to be distinguished by** a familiar pattern of social characteristics: **high proportions of female-headed households; high male unemployment rates; high proportions of marriages ended by divorce, separation, or abandonment; and high proportions of families with income from public assistance or welfare.** In America, the schools in these communities tend to have mostly nonwhite students and high proportions of students who read behind grade level and who have repeated at least one year in school. These communities tend to be in urban areas (see Block, 1979; Shaw and McKay, 1969; and Gottfredson and D. C. Gottfredson, 1985).

A decision maker (a judge, school official, probation worker, psychologist, or parent) confronted with a person who resembles the delinquent portrait would be helped by: (a) an understanding of the causes of and potential remedies for the individual's misconduct, (b) information about which remedies are known to be effective and which are known to be ineffective, and (c) what steps might be taken to reduce the number of such individuals about whom a decision must be made. In short, theory, knowledge of the effects of alternative treatments, and wisdom about prevention are useful. All citizens should also be concerned with ways to cope with disorganized communities and schools with high rates of delinquency.

I will describe some of what is known about delinquent behavior and some factors associated with the elevated risk of frequently engaging in such conduct. I will suggest some implications of these risk factors for actions that might be taken to reduce delinquent behavior. I will argue that approaches centering on what young people *learn* are likely to be most fruitful. **And I will argue that of the possible places where steps might be taken to reduce delinquent behavior—family, justice system, schools—the school is the most promising.** I will tell you why this is so, what has been tried and may work, and what has been tried and seems not to work. Last, I will speculate on what might be done to improve American education in ways that may be beneficial in restraining American youths from misconduct.

Delinquent Behavior, Adolescent Problem Behavior

The prevalence and incidence of adolescent antisocial behavior of various forms is astonishingly high. For example, in a survey of junior and senior high school students I recently completed, 13% of the boys admitted damaging or destroying school property at least once in the past year, 19% admitted carrying a concealed weapon, 50% admitted

hitting or threatening to hit another student, 6% admitted using force or strong arm methods to rob, and 19% admitted stealing or trying to steal something worth more than $50. Although the rates for girls are much lower than for boys for most types of delinquent behavior, they are not trivial. For example, in the same survey of junior and senior high school students, 6% of the girls admitted damaging or destroying school property in the past year, and 32% admitted hitting or threatening to hit another student (Gottfredson, D. C., Gottfredson, and Cook, 1983).

A small proportion of youths account for a large proportion of delinquent behavior. Marvin Wolfgang and his colleagues noted that about half the crimes committed by young people are committed by about 6% of them (see Wolfgang, Figlio, and Selin, 1972; and Shannon, 1982). Furthermore, youths who engage in high rates of one type of misconduct are not usually specialists; they tend to engage in a variety of different kinds of antisocial behavior. A young person who steals often also fights with others at school and in the home, drinks or takes illegal drugs, defies teacher and parental authority, and destroys property. Therefore, for some purposes it is useful to think about a general pattern (or syndrome) called *adolescent problem behavior.* When antisocial behavior results in the impairment of functioning in home or at school or is regarded as unmanageable by parents or teachers, psychologists sometimes describe this pattern of behavior that is outside the range of normal functioning as *conduct disorder.* This designation may apply to between 4% and 10% of all children. This pattern of behavior is displayed by a large fraction of youths who come before the courts and by about a third to a half of all child and adolescent clinic referrals. (Kazdin, 1987, described conduct disorder in the context of a review of treatment research and provided the estimates of prevalence.)

Adolescent problem behavior (delinquency, antisocial behavior) tends to be stable over time. That is, children

who display troublesome behavior early in their school career are likely to continue to display problem behavior as adolescents, and as adults they are more likely than others to engage in criminal behavior, become alcoholics, and have poor work and family adjustment. Although the *amount* of delinquent behavior displayed rises sharply in adolescence and drops off sharply after adolescence, people tend to retain their rank order when compared to agemates in the amount of such behavior they display. (On stability in adolescence see Gottfredson et al., 1983; Bachman, O'Malley, and Johnston, 1978; Olweus, 1979; Loeber, 1982; and Loeber and Dishion, 1983. On stability through adulthood see Robins, 1966, 1978; and Huesmann, Eron, Lefkowitz, and Walder, 1984. On age and amount of delinquent behavior see Hirschi and M. Gottfredson, 1983; and Loeber, 1982.)

A further distinguishing feature of adolescent problem behavior is the dearth of demonstrably-effective interventions that dependably reduce it. Although there are interventions that reduce specific kinds of problem behavior, too often reports of successful programs turn out on careful scrutiny to be exaggerated, flawed, or simply not supported by the evidence. This is not to say that there is no evidence that implies that certain specific approaches are promising or that we have no useful guidance on what to do. But it is an important feature of the problem of delinquent behavior that it is not readily altered by easily-applied remedies. (For reviews of intervention research see Dixon and Wright, 1974; Sechrest, White, and Brown, 1979; Martin, Sechrest, and Redner, 1981; and Kazdin, 1987.)

Who is at Risk?

The exploration of ways to cope with antisocial adolescent behavior can profitably begin with an assessment of those factors associated with a high risk of delinquency. Such an assessment helps to describe the problem, provide insight about the kinds of interventions or social changes that might be productive, and suggest where

and when those interventions might most effectively be applied. Evidence about the predictors of individual delinquent behavior reviewed in this section implies that educational or school-based interventions may be useful.

Much evidence shows that it is not only *individuals* who differ in their risk for delinquent behavior, but that communities and schools also differ in the levels of delinquent behavior they experience. Accordingly, an assessment of the factors differentiating among communities and schools is also useful. In this section I also review some of these factors to show that many of them also suggest educational approaches to reducing delinquent behavior.

Individual Risk Factors

Family. Differences in family background, detectable even at birth, influence the child's risk of later problem behavior. Parental alcoholism is associated with higher rates of childhood conduct problems, adolescent substance abuse, truancy, dropout, and criminal behavior among offspring (West and Prinz, 1987; Robins, West, Ratcliff and Herjanic, 1978). The reasons for this linkage are not clear, but they may involve prenatal exposure to alcohol due to mothers' drinking, genetic predispositions, family disruption related to alcoholism, lack of family supervision, or other causes. A large number of children in the family; family criminal history; very strict, harsh, or erratic parental discipline; and parental conflict are all associated with increased risk of delinquent behavior (Glueck and Glueck, 1950; McCord, McCord, and Zola, 1959; West and Farrington, 1975; Huesmann et al., 1984.) Again, the reasons for this linkage are not clear, but they may relate to frustrated responses to child conduct, cross-generational transmission of a predisposition to irritable aggression, the ineffectiveness of harsh or erratic discipline, limited attachment between parents and children, or other causes. In a study of Hawaiian children, family insta-

bility, low maternal education, congenital defects, high activity level in infancy, and a low Vineland Social Quotient at age two were found to be predictors of boys' official delinquency records by age 18 (Werner, 1987.)

These risk factors, all of which could presumably be assessed early in a child's life, suggest that the family is an appropriate locus of intervention. Perhaps one could persuade parents to drink less and improve their own moral character. Perhaps one could induce them to like and supervise their children more attentively and to bear no more children than they have the time, patience, and resources to cope with. These seem to be worthy goals, and if they could be achieved the results would probably improve the lives of the parents as much as those of the children. But the obstacles are formidable. This approach requires those parents who are most incompetent in child-rearing, who may not recognize deviance when it occurs, who have the least time and resources to manage their children, or who like their children the least, to implement the program. (West and Farrington, 1975, have suggested family planning programs. See also Hirschi, 1983, on the prospect of reforming families.)

Despite these obstacles, we have useful examples of effective interventions with families. Alexander and Parsons (1973) have reported an evaluation of a behavioral intervention with the families of status offenders that appears to have been effective. And, in an impressive program of research—based in part on observations that parents of aggressive boys use practices that promote aggressiveness and do not reward more socialized behavior—Patterson and his colleagues have demonstrated the value of behavioral interventions in the family. These interventions specify rules for the child's conduct and structure rewards and punishments to increase desired behaviors and decrease undesired behaviors.

Patterson's intervention program is based on the observation that antisocial children display unremitting aversive behavior until parents acquiesce to the child's wishes. This acquiescence rewards the child for the aversive behavior and rewards the parent for giving in (because the aversive behavior stops). The boy learns to persist in aversive behavior and the parent learns that there are *short-term* benefits of giving in. The parental practices are ineffective because they result in high and persistent rates of problem behavior. The intervention program entails teaching parents to identify, describe, and watch for undesired behavior and to apply social learning principles to reduce it. As the parents become more competent, more important behavioral problems—including problems outside the home—can be addressed (see Patterson, 1982, 1986; Reid and Patterson, 1976; Fleischman and Szykula, 1981; Baum and Forehand, 1981; Kazdin, 1985, 1987). Observations of child behavior in the home and teacher observations in school demonstrate marked improvements in behavior, even for some time after the family intervention. But this form of family intervention appears most effective in the least disorganized families, is more effective with more comprehensive and longer-term intervention with parents, and makes heavy demands on parents. Its long-term efficacy in reducing problem behavior is relatively unstudied.

School. The first time most American children are systematically observed by persons outside the family is when they begin to attend school. When they enter school they must meet the demands of the classroom teacher. The teacher expects them to demonstrate self-restraint, be attentive to instruction, and socialize with others in a disciplined way. These are universal environmental demands. As Sheppard Kellam and his colleagues (1975) have noted, teachers are *natural raters* who, because of their positions, are legitimized assessors of pupils' role performance. **There is suggestive evidence that teacher assessments of adap-**

tational status—particularly aggression and shyness—in the first grade predict certain kinds of adolescent problem behavior ten years later (Kellam and Brown, 1982). Classroom behavior ratings made by teachers in kindergarten and in first through third grades have shown moderate correlations with police contacts by age 17. Specifically, teacher ratings of classroom disturbance, impatience, and disrespect or defiance are most predictive of later delinquency (Spivack and Cianci, 1987). But large-sample and dependable studies that allow the assessment of the relation between early (kindergarten or first grade) teacher observations and adolescent problem behavior are hard to find.

Easier to find are studies that show that teacher ratings of student adaptation at around age eight or older are predictive of delinquency years later (see Craig and Glick, 1963; West and Farrington, 1975; and Loeber and Dishion, 1983). There can be little doubt that poor school conduct as perceived by teachers at least from about grade three implies elevated risk of adolescent delinquent behavior.

Other indicators of poor adaptation in school are also associated with the risk of adolescent problem behavior. Scholastic aptitude test scores at age eight or nine (West and Farrington, 1975) but perhaps not at school entry (Berrueta-Clement, Schweinhart, Barnett, Epstein, and Weikart, 1984) predict official delinquency records in adolescence. Many studies involving a variety of samples and measures of delinquency converge in implying a moderate negative correlation between scholastic aptitude tests and delinquent behavior by junior high or high school age (see Gottfredson, 1981; and Hirschi and Hindelang, 1977).

One of the least disputed and most often replicated risk factors for delinquency is low school grades. For reasonably representative samples, the correlations between school grades and delinquency are usually moderately negative (see Gottfredson, 1981; and Loeber and Dishion, 1983).

Limited educational attainment, special education assignment, being retained in grade, and poor attendance are additional indicators of poor adaptation to school that predict delinquent behavior. (On attainment see Bachman et al., 1978; on special education assignment see Berrueta-Clement et al., 1984; on grade retention see Spivack and Rapsher, 1979; and on attendance see Robins and Hill, 1966; and Gottfredson et al., 1983.) Attitudinal and self-report measures of adaptation to school in adolescence are also associated with the risk of delinquent behavior. These include attachment to or liking school, making an effort at school work, and reports of punishment in school (Hirschi, 1969; Gottfredson et al., 1983).

Adaptation in school is influenced by scholastic aptitude, behavioral dispositions such as impulsivity that are relatively independent of aptitude, and by social class and family background. This is apparent both from studies of students entering school in the early grades and studies of the subsequent educational achievements of adolescents (Weikart, Epstein, Schweinhart, and Bond, 1978; Bachman et al., 1978; D. C. Gottfredson, 1982; Lambert, Bower, and Hartsough, undated). Although scholastic aptitude tests are useful predictors of school grades and school persistence, they account for only a part of the variability in school grades and even less of the variability in measures of student conduct. Children bring individual differences developed in family environments to the elementary school that influence the way children are perceived by and responded to by teachers. Accordingly, a common goal of many preschool programs for disadvantaged children has been to prepare pupils for the behavioral expectations of early elementary school as well as to prepare them for the scholastic tasks they will face. Research implies that such preschool programs contribute to students' school competence independently of the effects such programs have on scholastic aptitude (Lazar, Darlington, Murray, Royce, and Snipper, 1982).

By adolescence, established patterns of poor school grades, truancy, limited effort on school work, disruptive behavior in school, disliking school, little commitment to education, lack of belief in conventional social rules, and delinquent behavior have developed for some students. This pattern of adolescent problem behavior—involving in-school as well as out-of-school components—somehow evolves from the combination of initial behavioral dispositions, scholastic aptitudes, family environment and school experiences. Because it contains so many school-related elements, the school is an obvious place to look for remedies.

Peers. Delinquent adolescents usually have delinquent peers (Gottfredson, 1982; Glueck and Glueck, 1950). This tendency is so strong that it is difficult to be certain that association with delinquent peers is not itself just another form of adolescent problem behavior. Travis Hirschi has argued that delinquent peer association is simply a reflection of "birds of a feather" flocking together, and that delinquent peer association is one aspect of delinquency rather than a cause of it. Others believe that delinquent peer relations lead to delinquency. For example, Ronald Akers and his colleagues have provided some evidence for a theoretical perspective on delinquency that implies that peers and others with whom a person is in association model and reward delinquent attitudes and behavior (Akers, Krohn, Lanza-Kaduce, and Radosevich, 1979).

Despite the theoretical dispute about the causal status of delinquent peer associations, there can be no question but that such associations constitute a risk factor at least in an actuarial sense. Peer group interventions, often located in a school or school-like setting, have been among the most popular forms of treatment for delinquent boys. Examples include the Highfields Project, the Provo and Silverlake Experiments, and many school-based projects based on Guided-Group Interaction or similar strategies (Weeks, 1958; Empey and Lubeck, 1971; Empey and Erikson,

1972; National School Resource Network, 1980; Gottfredson, 1987, reviewed these and related programs). The idea underlying these programs is that peer groups encourage (or fail to discourage) delinquent behavior, and the norms of peer groups must be altered so that these groups no longer support antisocial behavior and instead encourage and reward prosocial behavior.

A problem with peer group approaches to reducing delinquent behavior is that, if they intervene only with delinquent youths, groups necessarily are composed only of delinquent youths. Such peer group interventions may increase the solidarity of delinquent peer groups or increase the influence of delinquent peers on each other. This possibility is especially salient in institutional programs or programs for adjudicated delinquents in the community.

Because school populations contain a mix of students, only a fraction of whom are highly delinquent, it may be possible to structure school experiences or programs in ways that alter youths' friendship patterns. For example, schools can compose classrooms and study groups that mix different types of students together, or they can isolate troublesome youths or youths with academic difficulties from the mainstream.

School-Level Risk Factors

Schools with high rates of delinquency, victimization, and disruption tend to be urban schools with largely nonwhite student populations whose parents have themselves not gone very far in school; and these schools tend to have high proportions of students behind grade-level in reading. There are some additional features we often observe in such schools when they are assessed by the Effective School Battery, a diagnostic school assessment used in school improvement efforts. In schools where students report often being victimized, students also tend to report being treated

with disrespect by teachers, much association with delinquent peers, alienation, and high levels of punishment. Students tend not to believe in the validity of conventional rules or to like the school. In such schools, teachers report that students have little influence on how the school is run, that they have few positive interactions with students outside of the classroom, and that their classrooms are disorderly. In schools where teachers' reports of personal victimization are high, teachers also report that morale is low (they feel they cannot count on others in the school to help with school improvement), they report little in the way of planning and action for school improvement, and that the school's administration is poor. (See Gottfredson, 1985; for similar evidence in the context of a more analytical effort to account for differences among schools and evidence about the importance of the fairness and clarity of school rules, see Gottfredson and D. C. Gottfredson, 1985.)

This portrait of the disorderly school has important practical implications for the school as a locus for delinquency prevention and for increasing the safety, orderliness, and productivity of schools. **Schools with the greatest problems of delinquency are often demoralized organizations. It can be very difficult to implement programs in demoralized schools, and this is a major obstacle with which interventions to reduce the risk of delinquency must cope if they are to have any prospect for success** (see Gottfredson and D. C. Gottfredson, 1987.) In high-delinquency rate schools, it may be necessary to improve the schools as a whole.

The Role of Learning in Restraint Against Delinquency

Let me propose a perspective that integrates what we know about the individuals who engage in delinquent behavior at high rates. [I am drawing on social learning theory (Bandura, 1977; 1982); speculations

and evidence from the psychology of individual differences (Wilson and Herrnstein, 1985); social control theory (Hirschi; 1969); coercive family process theory (Patterson; 1982); and the data about the stability of problem behavior (Huesmann et al., 1984) and the difficulty in ameliorating it (Kazdin; 1987)]. This perspective involves several elements: (a) Individuals differ in impulsivity, daring, or future-time perspective and in the facility with which they learn. (b) These are enduring individual differences; they are traits not states. (c) The interaction of these individual differences with patterned differences in the family, school, and peer environments that people experience during their development result—through learning—in differences in the ability to behave competently in social environments. (d) This interaction also results in relatively stable differences in perceptions of the self and of the likely consequences of alternative actions, and these perceptions guide behavior. This perspective has implications for arranging learning experiences to reduce the risk of delinquent behavior.

Individual Differences. **There have been many false leads and much exaggeration in the history of the idea that persons who display high rates of criminal behavior are distinguished by their personal characteristics.** Lombrosian ideas about atavistic characteristics and overdrawn accounts of the feeblemindedness of criminals have been rightly rejected, **but in recent years the evidence about the link between scholastic aptitude or 'intelligence' and crime has been inappropriately deemphasized.** Individuals show dependable differences on tests of scholastic aptitude, differences that have modest levels of stability from the preschool years to the school years, and high stability from the school years to adulthood (Anastasi, 1968; McCall, Appelbaum, and Hogarty, 1973; McKay, Sinisterra, McKay, Gomez, and Lloreda, 1978). Scores on these tests predict to a moderate degree indicators of academic

competency—school grades, later academic achievement, and educational attainment—and they are correlated to a lesser degree with measures of delinquency. Scores on scholastic aptitude tests that have a large verbal component tend to be somewhat more correlated with measures of delinquent behavior than are scores on other kinds of aptitude tests, and verbally-loaded tests are usually among the best indicators of what psychometricians often regard as "general intelligence." Such tests appear to be relatively robust predictors of performance in a variety of complex occupations (Schmidt and Hunter, 1981). One interpretation is that these tests measure relatively enduring differences among individuals and the facility with which they acquire competencies—especially competencies in complex situations.

Individuals also appear to differ in impulsiveness or daring, and impulsiveness seems to be weakly to moderately associated with delinquency, scholastic ability, and poor school performance (Lefkowitz, 1968; Roberts, Erikson, Riddle, and Bacon, 1974; Kelley and Veldman, 1964; West and Farrington, 1975). Research has also shown that differences in the tendency to adopt a future time perspective or delay gratification is correlated with delinquent behavior. Observations similar to this have led James Q. Wilson and Richard Herrnstein (1985) to build a theory of criminality around the notion that individual differences in the extent to which people discount the future consequences of their behavior account for part of the differences in their criminal behavior.

Impulsivity or a tendency to discount the future may be a stable trait. Scores on the Strong Vocational Interest Blank's Adventure scale provide relevant information. Respondents earn high scores on this scale by reporting that they like risky activities and occupations, and people tend to maintain their rank-order over time on these scales—scores have high retest correlations over a period of three years. An interesting feature of these scores is that, unlike most other

measures of vocational interests, they fall dramatically with age. (Hansen and Campbell, 1985, report a decline of about one standard deviation between adolescence and adulthood for the Strong scores. Block, 1971, provides evidence of the stability of impulsivity from junior high school age to adulthood.) This drop in scores parallels the drop in the amount of delinquent behavior with age after adolescence.

Learning. People must learn socialized behavior and self-restraint. When my three-year-old daughter was younger, she would grab apples from the supermarket display and immediately take a bite if left unwatched in the shopping cart. Today, she asks if she may have an apple; if the answer is yes, she declares, "We will take it to the counter and pay for it." I suspect she often ponders taking a bite, but consciously rejects that action. Most adults (clearly not all of them) do not even reflect on the idea of eating or pocketing the apple without paying for it. They have learned to pay for it first, and they have learned this pattern of behavior so well that the behavior is *unconsciously* executed. **Socialized behavior in most aspects of day-to-day life is not reflected on; it is automatically displayed.**

How did my daughter learn not to bite the apple in the grocery store? First, she had to have the cognitive capacity to recognize the pattern in the situation involved. (Biting an apple on the table at home is not the same as biting an apple plucked from the display in the store.) She also had to be punished by having the apple yanked away from her and being spoken to in a disapproving tone. She was repeatedly told that biting apples before paying for them is not expected. She had the behavior of presenting the apple to the clerk modeled for her in a conspicuous way. (Hirschi, 1983, wrote that he regards the social learning perspective on modeling as "not directly relevant to delinquency; or even as potentially misleading bits of advice." Modeling *alone* is insufficient to restrain impulsive behavior; and research suggests that parental

permissiveness is more important in determining adolescent drug use than is parental drug use, e.g., McDermott, 1984. The importance of modeling, from the social learning perspective, is that it gives the learner the opportunity to observe the *desired* behavior and makes the behavior easier to acquire.) She was also rewarded for showing the expected behavior by being praised and given a treat when she presented an item to a cashier. Finally, she had parents who could identify preferred and proscribed behavior and who cared enough to help her identify expected and unexpected behavior, who kept her under close surveillance, and who responded to her behavior with rewards and punishments when it occurred.

Environments. Learning to follow rules in a responsive environment leads to competency in the environment. **Individual differences in the ability to learn from verbal cues, modeled behavior, and rewards and punishments undoubtedly determine the rate at which learning occurs. And, it is the *environment* that is the source of punishments, rewards, and signs of what is expected.**

I like to think about *environments* as differing in competency. A competent environment gets conforming behavior from the people who inhabit it. It does this by signaling what behavior is desired and what behavior is not desired, by making arrangements to detect desired and undesired behavior when it occurs, and by responding to the behavior with rewards and punishments. It uses levels of observation sensitive enough to detect the behavior of concern, applies consequences that are effective in influencing the rate at which specific behaviors are displayed, and uses cognitive signals that are appropriate to the developmental stage and abilities of the environment's inhabitants. Classroom and school environments differ in the ways they manage student conduct and discipline—some arrangements are more competent than others.

The outcomes of the interaction between people and the environments they experience are determined jointly by the individual differences the people bring to the environment and the differences among the environments they experience. Fundamentally, the task of educating and socializing children requires that the *environments* be arranged in ways that successfully produce the desired result.

My account of learning so far helps to explain why we observe correlations between conduct and measures of learning ability and impulsiveness on the one hand, and the efficacy of family interventions like Patterson's behavioral program on the other. It also helps to explain why the correlations of measures of ability and impulsiveness with delinquent behavior are not large. Traits interact with environments to produce learning and to regulate behavior.

Developed Personal Dispositions. The learning that occurs as a result of the interaction of a person with his or her environments produces more than just changes in behavior in specific kinds of situations. It also determines perceptions of the self and generalizations about the likely consequences of one's actions. These perceptions and generalizations guide behavior and, once they are well established, they influence behavior without conscious reflection most of the time. By adolescence, relatively stable individual differences in the content of self-perceptions and generalizations have usually developed, and it is possible to obtain reliable measures of self-perceptions using questionnaire items such as, "I do not mind stealing from someone—that is just the kind of person I am," and it is possible to reliably measure generalizations using items such as, "Taking things from stores doesn't hurt anyone." Not surprisingly, scales composed of such items are positively correlated with delinquent behavior (Gottfredson, 1985.) Because these perceptions and generalizations are "over-learned" and habitually applied, they guide behavior without conscious reflection, and they resist change.

The boys whose repeated misconduct brings them before the court can now be understood as a group who, on the average, have *learned* that they do not like school or their parents and that following conventional rules does not yield rewards. They have usually failed to learn to behave competently in academic settings, and they have failed to learn to restrain themselves from misconduct in other settings. Put another way, the family, school, and peer group environments they have experienced have not developed in them restraints against their misconduct. In the language of Travis Hirschi's social control theory, they have not developed bonds to the social order. Furthermore, this group can be understood as occupying environments that are relatively incompetent in controlling their behavior.

Now we can see why problem behavior is a stable trait. Not only do stable individual differences in scholastic ability and proclivity to impulsive expression contribute to the stability of behavior but, because individuals experience the same or similar environments over long periods of time, they are subject to the same or similar learning experiences. As a result they develop stable ways of perceiving themselves and their environments that lead to the display of similar behavior over long periods of time. Now, let us examine the implications for interventions to reduce the risk of problem behavior and the choice among loci of intervention.

Place of Intervention

There are three main places where intervention to ameliorate conduct problems might occur: families, the justice system, and schools. I will briefly examine each and conclude that the school is the most promising of these points of intervention.

"Since parents number in the millions, work for nothing, are stuck with the job, and usually prefer law-abiding children, they are a potential resource we cannot afford to ignore" (Hirschi, 1983).

Judge Maurice B. Cohill, Jr., ended his response to LaMar Empey's article on the family and delinquency in the 1985 volume of *Today's Delinquent* with the foregoing quotation, adding, "I just don't believe we are able to 'reform' parents." This is, in essence, the main problem with the family as a locus of intervention. Although I described earlier some approaches to intervening with families to reduce childhood antisocial behavior, neither the contemporary political climate nor current knowledge about social policy options related to the family are conducive to the application of broad-scale family interventions at present.

The family is the most important institution in the socialization of children but, for those children who are most at risk of adolescent problem behavior, the schools seem in a better position to implement effective interventions than are families. I am moved to add, however, that I hear with discouraging regularity from school officials that they inherit the behavioral problems they encounter in the school from the home—that there is little they can do to reform their troublemaking students unless parents instill in children a commitment to education. I hear this with regularity from school officials who have done little to harness the power of the family to apply rewards and punishments. If the families of young people who are troublesome are to be reached on anything like a large scale, it will be because the schools take the initiative to get parents' help while helping them control their children. The efficacy of behavioral programs that involve the family in rewarding and punishing school behavior has been repeatedly demonstrated experimentally (Atkeson and Forehand, 1979), but schools make little use of these methods.

The Justice System

It may be nearly impossible for the justice system to intervene to reduce the risk of adolescent problem behavior. The justice system is not in a position to punish misconduct in a timely fashion. The system also has difficulty in watching for desirable and undesirable behavior, but if this problem could be solved the essential problem would remain. To explain why the justice system may be ineffective, I must say a few words about effective punishment.

By manipulating environmental rewards and punishments it is possible to regulate behavior—to train people—if the environmental responses have certain characteristics. For example, we know that cueing, modeling, and clear descriptions of the expected behavior are useful.

Many members of the public have bizarre misconceptions about what behavior specialists mean by punishment. Punishment is an environmental event that reduces the behavior it follows. By punishment I do *not* mean painful electric shock, long prison terms, cruel flogging or anything like that. (Painful experiences do result in learning to avoid the behaviors that cause them. But the concept of punishment is much broader than painful punishment.) In the sense that I am using the word, punishment means the withdrawal of desired privileges, snacks, television, the use of a car, or the freedom to engage in a desired activity for *brief* periods of time. Effective punishment closely follows the behavior it is designed to reduce, and it should occur following the behavior a high proportion of the time. If Wilson and Herrnstein's notion that potential criminals are more likely than others to discount the future consequences of their behavior, this contemporaneous aspect of the environmental response is even more important.

The justice system uses punishment in entirely different ways. Some ways are self-defeating—they remove potentially effective tools for reducing the risk of subsequent delinquent behavior. The justice system

metes out punishment to "fit the crime" or to incapacitate feared people. It does this slowly and deliberately. If a young person is arrested for a crime, he or she may not be prosecuted. In the majority of cases a person is neither caught, prosecuted, nor convicted. In psychological terms, the punishment is not "contingent" on the behavior, and it is not frequent. The justice system's "punishment" does not match the psychologist's definition of punishment. It does not immediately follow the behavior. If anything at all is learned as a result of the punishment, it most likely is that punishment is unpredictable. **In short, the requirement of due process and the philosophy of just deserts work against the effectiveness of punishment in the justice system.**

A second feature of "punishments" applied in the justice system render them impotent as rehabilitative tools. Sentences or other sanctions are often applied for long periods of time so that it becomes difficult to use the withdrawal of freedom as an effective sanction. A characteristic of effective nonsevere punishment is that it is *brief* so that it can be frequently used as a response to behavior. For example, when a behavioral technique known as *time out* is used in changing behavior, a young person engaging in disruptive behavior may be sent to a room with nothing to do for a brief period of time—as brief as five minutes. The "time out" is time out from positive reinforcement—time out from the influences in the environment that have been supporting or encouraging the disruptive behavior. This time out is punishment. But when the time out is over, the person has a fresh start. He or she must be treated as if the incident were forgotten. This forgetting serves an essential purpose. It gives the young person something to lose by *subsequent* misconduct. Any time we structure a system so that a person has nothing to lose by misconduct or delinquent behavior, we weaken the restraints against that behavior.

Realistically, we had better place our bets for more effective prevention and treatment of delinquents elsewhere. It may be wise for juvenile and family courts to attend to their original emphasis, and avoid the temptations of a "just deserts" approach.

Schools

Schools are the principal government-sponsored institution involved with the socialization of children. The public schools are the main mechanism through which American egalitarian ideals can be pursued, the route through which social mobility is made possible and the limits of socioeconomic origins overcome. Ironically, they are also the principal winnowers of the successful from the unsuccessful in an allegedly meritocratic system. To get ahead, a young person must learn and persist in school. Rightly or wrongly, the view that education not only is but also ought to be the way to get ahead is widespread. The Tocquevillian tension between the mobility-promoting and mobility-limiting functions of schools is mirrored in competing claims about the proper mission of American schools.

Divergent claims about the mission of schools are made in an educational context that has been with us only for the last twenty years or so. In the early part of this century, high school graduation rates were fewer than 10 per hundred eighteen-year-olds. At the start of this century, the American society still had much immigration by people of low socioeconomic status, and education was a highway to upward mobility. By the 1960s high school graduation rates had come close to 80 per hundred, and secondary education now serves to sort out the losers rather than the winners.

In the 1960s, enthusiasm for the prospect of making education work to iron out disparities associated with race and social class in American society ran high. Our nation launched programs like Head Start and Follow Through with the aspiration that we could

make education work better for everyone. Expectations that everyone should complete high school had become well entrenched.

Now, sociologist Jackson Toby (1983), among others, argues that we can profitably do away with attendance laws that compel youngsters uninterested in education to remain in school, and that we should make federal grants to schools to hire security guards to keep predatory youths out of school. A similar view of the mission of schools was recently expressed by Assistant Secretary of Education Chester Finn who wrote that the alarm about current levels of school dropout is excessive, and at any rate dropout may be beyond the schools' control:

> The symptom is not likely to be eradicated by school-based remedies. Insofar as it is a manifestation of linked social pathologies and inherited characteristics, it is more like "going on welfare" or "committing a crime" than like the commonplace problems of school effectiveness that are susceptible to alteration within the framework of education policy and practice: an ill-chosen reading curriculum, say. . . . Moreover, if the dropout problem is more accurately seen as a symptom of the "underclass" phenomenon than as an education issue, then school-based solutions are not apt to yield much more success than changes in the delivery-room protocols of obstetricians are likely to alter the incidence of out-of-wedlock pregnancy (Finn, 1987).

Moreover, Finn sees current concerns about school noncompletion as attempts to torpedo reforms calling for higher standards.

There is no point, according to this contemporary conservative position, in trying to educate youths who do not want or can not benefit from continued secondary education. These youths just spoil the schools for those young people who do want to learn. They drag down the quality of education for everyone by lowering teachers' expectations and the level of instruction,

by disrupting the classroom, and by destroying the continuity of instruction through frequent absences. We need higher standards, it is said, not a watered-down curriculum that dilutes the quality of education for more able and interested students. Besides, school failure is not caused by problems with schools but by the defects (lack of ability, delinquency, and disinterest) of the failing students.

The contemporary conservative view is wrong not because it is false that troublesome youths disrupt the orderly process of education (they do), but because it is shortsighted. Education policy should have the same future-time perspective we wish more young delinquents had developed. Let me explain why we should be concerned with making the schools work well for more students.

First, Finn's argument that the current dropout rate (around 20% nationwide) is okay and perhaps as good as can be achieved deemphasizes the vastly different completion rates for blacks and Hispanics than for white Americans. These rates are very different for inner city populations than they are for the rest of Americans. If an 80% completion rate is okay, then American education for Hispanics, blacks, and inner city youths is not okay, for completion rates for these groups are much lower. (Dispute-free data about the extent of dropout are not to be found anywhere. The best single source is a report by Pallas, 1986.)

Second, the drop in the quantity of youth crime since 1975 reflected in such indicators as the Uniform Crime Reports is due mostly to a drop in the high-crime age population. Demographic projections are easy to make because the people who will be entering the high-crime ages in the next decade have already been born and counted. Population growth will be greatest among the inner-city, black, and Hispanic populations most at risk of adolescent problem behavior and school dropout. The quantity of youth crime will rise again.

The lack of concern about making schools work for adolescents who do not like school or do not do well in it neglects the troublesome fact that it is not just high school completion that is desired—it is well-socialized, productive, and noncriminal citizens. Who would be satisfied if high school graduation were universal but the same proportion of youths who now drop out of school were equally delinquent, had the same attitudes about the validity of conventional social rules, and were equally lacking in the skills needed to do productive work? High school graduation is not the issue; it is the more general problem of which a graduation rate is merely one indicator that should be of concern.

There is already evidence that the contemporary conservative perspective on education is making its influence felt. The press for standards has led to more rigid criteria for promotion from grade to grade and to more emphasis on educational tests as indicators of quality. The result, in those school systems with which I am familiar, has been increases in grade retention rates—sometimes accompanied by the *illusion* that increased standards are paying off in increased educational performance. This is an illusion, because most school systems employ a specific type of legerdemain that involves reporting test results by *grade level* not by age. Grade retention results in older students in each grade and the appearance of educational progress. Yet grade retention is a potent predictor of later dropout. Educational excellence should mean improving the delivery of education not fiddling with the figures. The future consequences of these short-sighted "reforms" are yet to be revealed in their full form, but the potential for further increasing the risk for those students already at most risk appears great (see McDill, Natriello, and Pallas, 1986).

Finally, the conservative perspective shares a fault with more liberal perspectives in focusing on the high school years when dropout actually occurs. Education systems (and dropout statistics) tend to focus attention

on the problem of student academic incompetence when it becomes most painfully obvious. This diverts attention from signals earlier in educational careers that many students are not benefiting from education. Both liberals and conservatives recite statistics on the economic and labor market concomitants of a high school diploma. These statistics exaggerate the social and economic value of a diploma. It is true that those who graduate from high school earn more money than those who do not, but these differences are *much* smaller once one adjusts for the other characteristics of the school-leaver (Featherman and Hauser, 1978). It is not hard to see why. Imagine the difference in value to an employer of an academically-incompetent, delinquent individual (with a poor attendance record, who is not bonded to the social order, and who does not believe in the validity of conventional social rules) without a diploma and the same person with a diploma. We must be concerned that the person is incompetent in all these ways and about how things might have been done differently throughout the person's entire school career to ameliorate this constellation of problems.

The proper mission of the school, because of its standing as the major institution through which society attempts to tinker with the socialization of the young and because of large (if inadequate) public expenditures for education, **is to do the best job possible of educating all students.** It is sometimes said that too much is expected of the schools—that demands that it provide appropriate services for high risk youths at the same time that it provides excellent education for the most able students sets too complex a task. In my view this is a denial of the mission of American education; **the task is to educate the students the school gets, not just the ones the school wants to get.** In this respect, the public schools have a much more difficult challenge than private and parochial schools. Because the challenge is difficult, we should not underestimate

the resources, persistence, and open-minded problem solving that will be required to meet it.

In the following sections, I will review the record of accomplishment in developing school-based programs for youths at risk of adolescent problem behavior. It seems clear from this record that the quality of the scientific work performed by educational researchers is uneven. We should expect more of scientists than they have sometimes delivered. Nevertheless, some research is clear and compelling.

What Has Been Tried?

A broad range of school-based programs has been supposed to have potential for reducing the risk of adolescent problem behavior through one mechanism or another. Included are preschool programs for disadvantaged children, early elementary school programs to promote learning for disadvantaged populations, general attempts to improve instruction, behavioral and educational treatments within schools targeted at high-risk individuals, programs to make curricula more appropriate, diverse designs for alternative schools, peer-counseling programs, pull-out programs to provide special education services for disadvantaged students, special "high-relevance" law-related instruction, school-wide disciplinary programs, programs to improve school climate, organization development interventions in entire schools, classroom management programs, and programs that alter the organization of instruction in the classroom. I cannot review everything that has been tried or suggested, but I can offer an organizing framework on the various approaches to intervention, and I can assess a few examples of the various types to illustrate the range of possible benefits and harm that might be expected given present knowledge.

Programs can be classified according to whether they aim to serve youths identified as at risk or to reduce risk for an entire population. For example,

preschool programs for the disadvantaged are targeted at a selected group of high-risk individuals and are aimed at increasing the individuals' adaptation to the demands of elementary school. Pull-out programs that remove high risk students from the classroom for special instruction have similar aims. In contrast, cooperative learning strategies for organizing classrooms for instruction—so that all children benefit more from instruction—target all students and focus on changing what is done in the classroom environment as a means to bring about beneficial outcomes for students.

In principle, a maximally-effective program might be comprehensive in that it would combine environmental components that help everyone develop competencies with interventions specifically aimed at persons at greatest risk. A maximally-effective program would cope with the known risk factors for adolescent problem behavior (including academic failure). And because problem behavior is a relatively enduring characteristic, a maximally-effective program would be applied over students' entire educational careers—not as a one-shot, short-term intervention. It should go without saying, but the record of accomplishment in this area requires that it be said, that what the program entails should be well specified and delivered as designed if it is to be maximally-effective.

No program of which I am aware has approached these criteria for maximum effectiveness. Therefore, my partial review of what has been tried is a review of programs that are of limited scope compared with what might be done. The evaluations of these programs are also often limited.

I will begin by describing preschool programs for disadvantaged children and successor programs extending into the early elementary years. Then I will discuss research on the segregation of or mainstreaming of at-risk children. Last, I will describe programs

in middle and secondary schools aimed at improving the school or the behavior of problem adolescents. Some of these programs may be helpful; some may not.

Preschool Programs

The War on Poverty, the legislation creating the Office of Economic Opportunity, and Title I of the Elementary and Secondary Education Act of 1965 generated a large compensatory education movement in the 1960s. These programs represented a large federal investment in improving education and, unlike most educational reforms, they were accompanied by a sustained effort at evaluation. Some evaluation research has value in helping to understand the effects of the preschool programs begun during this era of enthusiasm.

Head Start programs were based on the notion that the first three to five years of life are critical to the development of intellectual and social skills, and that disadvantaged students in particular would benefit from developmental interventions during these preschool years. (See Natriello, McDill, and Pallas, 1987, for a review of these programs, their rationale, and evaluations.) There were differences of opinion among educational experts about the nature of interventions that would be appropriate for preschool children. Some experts, influenced by Piagetian perspectives on child development, favored allowing children to explore materials and develop concepts and categories on their own. Other experts developed highly-structured, verbal, and sequenced instructional programs. Some programs were of a nursery school type; most included some form of interaction with the home as well as a school-like component.

The earliest evaluations of Head Start programs are now important mainly because they showed that the program was not implemented in a very intensive form. The most recent national evaluation of Head Start programs is more informative about the recent

status of Head Start, and it provides a more favorable portrait of its effects (McKay, Condelli, Ganson, Barrett, McConkey, and Plantz, 1985).

Preschool programs usually produced modest short-term effects on cognitive test scores and tests of social development such as self-esteem and social behavior, and they produced more lasting effects on health, psychomotor development, and nutritional status. The national evaluators speculated that improvements in Head Start—including better standards for implementation, better training and technical assistance, and moving from summer to full-year programs—had strengthened the program.

This recent evaluation paralleled other evaluations of compensatory education interventions in finding a *fade-out* effect. The differences in achievement gains shown by program and control children diminish over time so that after a year or two in school the differences are no longer detectable. **This fade-out effect has so often been observed that it may be regarded as an expected feature of the effects of early educational interventions.**

The national evaluation of Head Start provides one kind of accounting of the effects of this large program—and perhaps the most helpful accounting from a national policy perspective. But the examination of specific preschool programs can provide a more fine-grained picture of the influence of the programs. These more fine-grained examinations are useful because it is often possible to examine more detailed information about specific student outcomes than is available for the entire national program.

Three specific reports are important either because of their special value in revealing the effects of preschool programs or because they have captured media and policy-maker attention. These are, in descending order of importance and ascending order of media attention, (a) the *consortium studies* involving the pooled and separate examination of several specific

preschool programs that made their data available to a group of researchers, (b) the *Changed Lives* report on the long-term effects of the Perry Preschool Program, and (c) a *comparative study* of three different preschool programs. The first of these reports is most important because it provides a reasonably careful examination of the typical effects that can be expected from a preschool experience for disadvantaged children. The second has less scientific value, but it is important to discuss because of the attention it has received and because the authors have pressed the policy implications of their study in a persuasive fashion. The third has little scientific value, but I will discuss it to alert you about some features of a study to attend to in making your evaluations and to illustrate an example of a small study in which authors and journal editors should have displayed more scientific circumspection and less speculation on policy than they did.

Consortium Studies. Investigators who had independently designed and conducted eleven preschool programs for children in low-income families in the 1960s agreed to pool their data and conduct a joint follow-up study. This group, the consortium, cooperated with a group of scientists led by Irving Lazar and Richard Darlington to analyze and summarize the information about the effects of these preschool treatments not only on cognitive and school performance outcomes but also on students' educational and occupational expectations and parental expectations for their children (Lazar et al., 1982).

The eleven programs had a common objective of counteracting the effects of poverty on young children, especially the effects believed to derive from early experiences. Program designers hoped that early intervention would solve the *cumulative deficit* problem, the problem that lower socioeconomic status children not only begin school at an academic disadvantage but also that they lose ground over time. Some were *center-based* nursery school programs that differed in

their structure and curriculum. Instruction took place at centers, and parents were visited and observed, but parents were usually not involved in the routine operation of the program. *Home-based* programs focused on a parent (usually the mother) as a way to influence the child's development. Activities were introduced into the home by an educator who trained the mother in the use of the activities. *Combined* programs used both of these strategies, combining a center-based nursery school and home visits.

Program participants were typically poor and black, lived in cities, and scored somewhat below average on scholastic aptitude tests. Programs served children between 3 months and 5 years of age. Some programs were implemented as experiments with children randomly or nearly randomly assigned to participate or not, and others employed other—less dependable—evaluation designs. The consortium researchers collected information about participant and comparison group members' school progress and scholastic achievement, and they traced and interviewed youths and parents to assess their attitudes years after participation in the programs ended. The consortium investigators examined the results of more-nearly-randomized design projects separately from those with less rigorous designs, and they employed methods to minimize the influence of extreme cases on their summary analyses.

The results showed that program students were less likely to be placed in special education classes and were less likely to be retained in grade than were comparison students. They showed that participants were less likely to be assigned to special education status even after statistically controlling for what may be the primary effect of the program—scholastic aptitude measured at the *end* of the intervention. Program participants were better able to meet the demands of the school than were comparison students, apparently even beyond the extent that might be explained by better scholastic achievement.

Program participants performed substantially better than comparison children on standardized achievement tests for math and reading, although the effects for reading may not be as dependable as those for math. The consortium researchers' results imply that the size of the difference between the treatment and comparison groups' performance in achievement narrowed over time from the third to the sixth grade, displaying the familiar fade-out effect; but the effects were detectable over several years. Similar results were obtained for "intelligence" test scores. The results did not show any difference between the treatment and comparison students on educational or occupational expectations, but they did imply that the mothers of the program participants were more satisfied with their children's performance and had higher aspirations for them.

The research did not produce any dependable evidence of the differential efficacy of the various programs or of the programs for different types of students. **In short, the consortium study implies that these preschool programs had beneficial effects that did not vanish but that did diminish over time.** This seems to be a general finding in research on preschool interventions. Children do learn and benefit educationally from them, but the benefits detectable by using educational tests diminish over time. It is quite possible that the grade retention and special education placement effects of the programs have important consequences.

Changed Lives. David Weikart and his colleagues have reported on a follow-up study of 58 youths who participated in the Perry Preschool and a nearly randomly equivalent group of 63 youths who did not participate (Weikart et al., 1978; Berrueta-Clement et al., 1984). All were black, low socioeconomic status children. At ages 3 and 4 these children entered either the preschool program or a control group that did not attend a preschool. Information about these youths was collected between ages 3 and 11, and at ages 14,

15, and 19. **The investigators claim positive effects of the preschool intervention at age 19 on employment, high school graduation, and arrests, among other things.** Weikart and his colleagues argued that these beneficial effects came about because the preschool program set in effect a chain of interactions between the students and their environments. They argued that the preschool alumni displayed more school competence and were less often assigned to special education or other unsalutary experiences. This resulted in their better academic performance and reduced delinquency in adolescence. Accompanying economic analyses make all this look like a terrific bargain.

The follow-up did produce promising results, but the claims made by the investigators seem excessive for several reasons. Let us examine this study in more detail. It was possible to obtain school records for 54 treatment and 58 control group students through grade 6. This is a reasonably high proportion of the students in both groups. For preschool group members, the researchers reported a smaller percentage of years spent in special education in grades K-6, a smaller percentage of children ever classified as mentally retarded, and more years receiving remedial educational services than for control group members. The researchers examined a large number of attitudes towards high school and reported differences favoring the treatment group on a few items. They reported that a larger proportion of treatment than control youths graduated from high school.

They also reported that a smaller proportion of treatment than control group members had ever been arrested or charged (as juveniles or adults). The proportion arrested as juveniles were not significantly different for the two groups, nor was the proportion arrested as adults significantly different by conventional statistical criteria. The lifetime prevalence rates

(percentage ever arrested as either a juvenile or an adult) are difficult to interpret—if not impossible. A footnote in the report discloses that a much smaller fraction of preschool than comparison group members consented to having their juvenile police and court records searched, and it is therefore not clear from the report how these prevalence rates (reported for the *entire* sample) were estimated. For the adult criminal history data, which were presumably available for the entire sample, there were no significant or remarkable differences in the number of convictions, proportion of persons convicted, or proportion of persons confined. There were differences (favoring the treatment group) on number of arrests. The general pattern of the data imply that there was a smaller number of high-rate offenders in the control group, and these high-rate offenders pulled up the mean scores for this group. Self-report frequency data for the two groups on 16 different offenses showed differences favoring the treatment group for three of the offenses; the three offenses all involved interpersonal aggression.

The sense one gets on reviewing the results reported on the Perry Preschool follow-up is that they are presented in a way that sheds the best possible light on the program. Criminologists and measurement experts do not all see eye-to-eye on the best way to present data on delinquent behavior and crime, and there are alternative ways to present such data. **Different methods of scoring self-reported delinquency, for example, have different implications for the suitability and interpretation of statistical tests.** It is not appropriate to go into the technical details here, but in general terms the reliance on frequency data about crime usually increases the influence of a small number of individuals' reports on the means. What are called *variety scales* (Hindelang, Hirschi and Weis, 1981) are often less sensitive to extreme cases and could also have been scored to supplement the frequency scores reported. **Probes for what statisticians call**

the "robustness" of the results would also have been useful, i.e., checks to see whether or not the statistical differences remain when extreme cases are excluded from the analyses. More complete tabulations, including standard deviations, would also have made the results more interpretable.

If we could have confidence in the lifetime prevalence data, it would be possible to conclude that a difference in proportions ever arrested this large or larger would occur by chance infrequently. But absent confidence in those data, and given the technical problems that a few high-rate offenders present in interpreting the frequency data for adult arrests and self-reports, it is difficult to have confidence in the outcome data for crime. **Even if we could have confidence in these measures, the stability of antisocial and delinquent behavior is so high, the effect is seen so long after treatment, and so few other studies have found large effects even immediately after an educational intervention, that a sober-minded scientist would insist on replication of the results before making policy recommendations.**

In separate analyses, Weikart and his colleagues reported on an attempt to elucidate the process through which their preschool intervention may have reduced delinquency by using a procedure known as causal modeling. The results of the causal modeling exercise they present are obviously incorrect. (Specifically, the percentages of variance explained cannot be correct given the path coefficients presented in their figures; and the model including more explanatory variables would have to alter the path coefficients for variables from model to model as well as the percentages of variance accounted for, contrary to the results presented.) Furthermore, these causal models are deceptive in that they suggest to a nontechnically-oriented reader that there is a chain of events that

preschool participation puts in motion that results in less delinquency and more employment by age 19. The data underlying the causal model (Berrueta-Clement et al., 1984) cannot be defensibly used to suggest this chain of events. The underlying data show essentially no correlation between preschool attendance and delinquency (arrests) and therefore they do not suggest an effect of the program on delinquency. Furthermore, the correlation between preschool participation and arrests, on which the analysis is based, is so small (and it is nonsignificant) that it does not jibe with results presented elsewhere in the same report about the association between program participation and arrests.

The same sample appears to have been the subject of separate analyses by Farnworth, Schweinhart, and Berrueta-Clement, 1985, using self-report delinquency data at age 15 as dependent variables. Three of four delinquency factors examined were not influenced by preschool participation according to the researchers' models. An "aggressiveness" factor was not influenced by preschool attendance according to the models, although it was the interpersonal aggression items for which Berrueta-Clement et al., 1984, reported significant differences in their age 19 self-reports. The only factor on which preschool attendance had a nominally "significant" effect was a dishonesty factor (including theft); whereas the age 19 self-reports showed no differences for a stealing subscale. The differences between the findings at age 15 and 19 contribute to a "now you see it; now you don't" impression that is not surprising in small sample research. **Discrepancies of this kind undermine confidence in the remainder of the results as well.**

The *Changed Lives* report contains a section making estimates of the economic benefits of the preschool program, taking into account such things as the reductions in the cost of crime that result from the preschool intervention. All things considered, economic projections of this kind are interesting but undepend-

able. The projections are based on a single small study, a study requiring replication, and a study demanding great caution in interpretation.

A comparison of three preschool programs. A recent report comparing three very small groups of children (18 persons) exposed to three different preschool experiences by Lawrence Schweinhart, David Weikart, and Mary Larner captured newspaper and educational newsletter readers' attention with article titles such as "Preschool Pressures, Later Delinquency Linked in Study." **Although the authors of the study cautioned that their findings were based on one study with a small sample, they showed a remarkable lack of restraint in speculating in their article on the policy implications of their findings** (see Schweinhart, Weikart, and Larner, 1986).

Here is what the investigators say they found in their study of children who were nearly randomly assigned to three preschool treatment types (nursery school, a language-oriented educational program, and the High/Scope curriculum) and followed-up through age 15: (a) no significant difference in achievement test scores at ages 7 or 8 and no significant differences on a "competency" test total score at age 15; (b) no difference in self-reported police contacts or truancy; and (c) a significant difference on a self-report delinquency scale using a frequency scoring formula—the 18 persons in the language-oriented curriculum had a much higher mean on this scale than did the other two groups, although no test for the significance of the difference for specific comparison groups was reported. Most likely the presence of a small number (two to three) of high-rate delinquents in the language-oriented curriculum group accounts for these results. The statistical test used by these investigators is sensitive to these extreme cases, and I judge it to have been inappropriate. It is good practice to examine several different ways of measuring outcomes.

This small-scale study is not a sound basis for concluding that the three curriculum types differ in their effects on delinquency. The conclusions are not even consistent with this group of investigators' previous conclusions about these three instructional programs. In an earlier report the investigators downplayed the *superiority* of the language-oriented program in its effects on cognitive outcomes and wrote, "On the basis of these results, we have concluded that the principal issue in early childhood education is not *which* curriculum to use but how to manage *any* curriculum to achieve positive results" (Weikart et al., 1978). **The results of this small and irresponsibly-reported study, unless replicated in large-sample research, are at present best regarded as a fluke.**

Summary: Preschool Programs. High-quality preschool programs appear to help disadvantaged children prepare to meet the demands of school. For a time, they raise scholastic ability, although the effects fade with time. Preschool often reduces the assignment of students to special education and the retention of students in grade. Because special education assignment is costly and can be implemented in a harmful way, and because grade retention is costly and a good predictor of dropout, any intervention that has these effects is useful.

Perhaps one of the most important preschool intervention experiments seems to have been ignored in reviews of the literature by American scholars. This was a program combining nutritional, health care, and educational treatments for groups of chronically undernourished children from Colombian families of low socioeconomic status (McKay et al., 1978). This research applied a high intensity treatment differing in duration and beginning at different times for different groups of children between 42 and 87 months of age. The quality of the research was high, and the results show that the longer the treatment and the earlier the treatment the greater the gain in academic

ability scores. The most powerful intervention did not bring the low-socioeconomic-status, low-weight-and-height treatment group up to the average ability scores of the high socioeconomic status children in a comparison group, but it did bring the treated group's mean Stanford-Binet Intelligence test score at age 8—after a year of primary school—up to only 5 months behind the theoretical normal score. Although the children studied were more disadvantaged than most children involved in U.S. compensatory education studies, the results suggest that the longer the duration of a well-planned and multimodal intervention, the greater the beneficial effect of the intervention.

Elementary School Programs

The observation that achievement gains made as a result of preschool programs for disadvantaged children fade with time implied that longer-term programs extending into the elementary school years may be needed to sustain gains. In the 1960s, the federal government began to sponsor a variety of such intervention efforts in the Follow Through program.

The most successful of the intervention types overall was almost surely a *direct instruction* method that, although not successful everywhere it was tried, usually had the most dependable beneficial effects on measures of basic academic skills as well as affective outcomes (Stebbins, St.Pierre, Proper, Anderson, and Cerva, 1977). This approach evolved from the language-oriented preschool programs applied earlier. It entails a highly structured approach, a fast instructional pace, a hierarchical arrangement of steps, frequent questioning and praise for correct answers, and drill and practice (Bereiter and Engleman, 1966; Becker and Carnine, 1981). The program's authors sought to make the program "teacher proof" and so put demands on teachers to follow the planned lessons closely. These demands do not please all teachers, and the method requires the use of classroom aides. These appear to be its major limitations when compared to

alternative programs involved in Follow Through. (The Stebbins et al., 1977 report was, naturally, not the last word on the relative effectiveness of the various Follow Through program models. The contentious literature on the topic is reviewed by Natriello et al., 1987, who provide the relevant citations.)

A long-term follow-up study of students who had experienced direct instruction through three levels of the program (beginning in kindergarten or the first grade)—and compared them with presumably similar students from another school—traced outcomes for as many of the students as possible. Although this study suffers from a number of defects due to its non-experimental design and unreported attrition rates, the results imply much higher rates of high school graduation for students exposed to direct instruction (Meyer, 1984).

What of the High/Scope cognitively-oriented curriculum when applied in early elementary grades? It did not fare as well in the Follow-Through evaluations, usually coming out near the bottom of the list of programs. As Slavin (1987b) put it, "What these findings imply is that the developmental/humanistic models *can* be effective, as evidenced by their apparent success in several sites, but the evidence for this or evidence of what is required to ensure their success [is] essentially lacking." (Kennedy, 1978, summarized the Follow Through evaluations.)

Overall, the various evaluations of both preschool and elementary programs imply that structured, sequenced programs for disadvantaged children can reduce their disadvantage; that the effects of programs fade with time; that some increase in school competency may lead to long-term benefits; and that the longer the duration of a good intervention program, the greater the benefits.

Recent Developments. Long-term assessments of the benefits of sound educational interventions are only

available for the programs developed for the War on Poverty, Head Start, and Follow Through programs. But educational researchers have continued work to develop elementary school instructional methods that may be as effective or possibly more effective than those used in Follow Through. The best known and most widely used of these methods are some form of Benjamin Bloom's *mastery learning* model (Bloom, 1974) and *cooperative learning* methods on which Robert Slavin is the leading researcher-developer. (Stallings and Stipek, 1986, reviewed both mastery learning and cooperative learning research; Slavin, 1987a, reviewed mastery learning research.)

Not all students learn at the same pace and, as a result, classrooms are usually heterogeneous to some degree with respect to the level of instruction most beneficial to different students. Both mastery learning and cooperative learning are attempts to cope with this heterogeneity. **Mastery learning strategies are designed to give slow-learning students the instruction they need to master the material being presented.** Application of these techniques requires clear instructional objectives, breaking instruction into discrete units, assessing mastery before moving from one unit to another, and practice and corrective instruction. This strategy has been demonstrated repeatedly, and it does help slow-learning students to master material. But it shows larger effects on tests made specifically for the study in question than on standardized achievement tests. The primary drawbacks of mastery learning are that it usually requires more instructional time than may be deemed feasible to allow for nearly all students to master the material presented, and that it may help slower students at the expense of students who can master material more quickly.

Cooperative learning methods cope with heterogeneity by creating classroom arrangements that provide incentives for progress or performance for all students.

They do this by making use of improvement points, success in competitions between students of approximately equal ability, or similar methods. The essence of successful cooperative learning programs is *cooperative incentives* for learning. A variety of cooperative learning methods have been shown to be effective in increasing academic achievement for both disadvantaged and other students. In addition, cooperative learning methods have shown positive effects on race relations, liking for school, and self-esteem (Slavin, 1983; Slavin and Madden, 1987). These noncognitive effects of cooperative learning methods are especially important because they suggest that the methods have potential for rearranging friendship patterns—a potentially valuable tool in severing delinquent peer associations. Cooperative methods also appear to have the potential for harnessing peer groups as a source of restraint against individual misconduct because the groups have a stake in the comportment of each of their members. These prospects have not been evaluated.

Slavin and Madden recently reviewed classroom programs to determine what principles underlie those that are effective for at-risk students in the elementary grades. Their conclusion: "Consistently effective classroom programs accommodate instruction to individual needs while maximizing direct instruction, and they frequently assess student progress through a structured hierarchy of skills" (1987). A complete assessment of strategies and arrangements for assisting disadvantaged or slow-learning students to succeed in school is beyond my purpose here. (For useful reviews see Slavin and Madden, 1987; Slavin, 1987c; and Madden and Slavin, 1983; 1987.) **The important point is that clear progress is being made (a) in the development of a theoretical understanding of ways to arrange instruction in elementary schools that does not require the segregation of slow learners from other students and (b) in the technology required to deliver instruction that is**

beneficial and rewarding to more students. These developments imply the prospect of delivering well-articulated, well-designed, and effective instruction throughout the elementary years. Such a comprehensive program of intervention would not lead to levels of achievement for disadvantaged students that equal the levels achieved by more advantaged students, but there are now clear directions available for assisting students who are at elevated risk of school failure to display far more academic competency than is now typical.

Harmful Programs. Students who are poor performers in school present difficult problems of classroom management and instruction. A common approach to these problems, increasingly used until the passage of the Education for All Handicapped Children Act of 1975, was to place slower students in separate classrooms. An argument for such placements is that instruction can be better tailored to the academic needs of the students, although the weight of this argument depends on the quality and efficacy of the services provided in special classes. Arguments against such placements include the possibility that the separate education provided may be inferior, the special education placement may stigmatize students, and reintegrating students into the mainstream classes later on is difficult.

Convincing evidence implies that even high-quality special educational placements can be harmful. In one credible evaluation, students classified as educationally mentally retarded or emotionally disturbed were randomly assigned either to regular or high-quality special classes (Calhoun and Elliott, 1977). Regular class placement was more beneficial to both groups of students than was special class placement. The results were especially impressive because they showed a cumulative disadvantage of special education placement compared to regular class placement over a three-year period from grade three to grade five. A review of educational programs for students with mild educational dis-

advantages by Nancy Madden and Robert Slavin showed few benefits of special education placement and relatively consistent evidence of the benefits of placement in regular classes (Madden and Slavin, 1983). The use of individual instruction, well-designed resource programs, and cooperative learning techniques is useful for enhancing the self-esteem, conduct, and achievement of main-streamed students. It also increases their acceptance by other students.

Middle and Secondary School Programs

By middle or junior high school ages, problems of truancy and unmanageable student conduct become more difficult for schools to bear. **In contrast to programs at the elementary level, which are usually perceived as having a focus on academic failure, programs more explicitly directed to coping with adolescent problem behavior have been attempted in middle and secondary schools.** These programs are sometimes seen as dropout prevention programs, sometimes as delinquency programs, sometimes as attendance programs, drug prevention programs, or discipline programs. Some programs involve the assignment of students to special "alternative schools" believed to be in a better position to serve troublesome youths or believed to provide a socially-responsible way to siphon off the troublemakers so that the regular schools can conduct their business.

I will illustrate the range of what has been tried in the way of delinquency prevention or treatment programs in schools for adolescents and what is known about the effects of these illustrative programs based on evaluations that are usually ambiguous. To do this I will discuss mainly programs with which my colleagues and I have been involved as evaluators or (occasionally) instigators. These programs fall into several categories: (a) alternative schools; (b) peer group interventions; (c) individually-targeted interven-

tions; (d) school improvement programs focused on discipline or instruction, or both; and (e) special classes or curriculum.

Alternative Schools. The things called "alternative" schools are a variety of things indeed. I will describe two: (a) the Academy for Community Education that attempted to apply a behavioral approach to academics, discipline, and career development for students whom the public schools would rather do without, and (b) the Compton Action Alternative School that tried to provide a supportive and safe learning environment for youths who were in difficulty with the school system and the law.

The Academy for Community Education (ACE) was a small alternative school serving youths at high risk for delinquent behavior drawn from the Miami area public schools. It combined intensive basic skills training with a community-based vocational apprenticeship program. A "token economy" system was used to provide incentives for appropriate conduct and academic achievement. In such a system, students earn tokens that are exchanged for more concrete rewards on scheduled occasions. Although this program had a variety of interesting features, it was distinguished primarily by this behavioral approach to discipline and incentives for learning. An evaluation of this program (D. C. Gottfredson, 1986a) implied that it was successful in increasing the amount of academic credit its students earned and that participants may have attended school more regularly and persisted longer in school than a nonequivalent comparison group. No significant effects of the program on achievement tests were observed, but analyses did imply that ACE participants liked school less than comparison students, scored higher than non-ACE students on a measure of rebellious attitudes, and reported a greater variety of serious delinquent behavior.

The evaluation of this program had a number of shortcomings that stemmed from relatively small sample sizes, the lack of random assignment to treat-

ment and control conditions, and attrition from the ACE program before the intended "dose" had been delivered. **Despite these limitations, the evaluation implied that the program had created an orderly environment that may have been a little too strict. It illustrates a program model that—with modification to make the school more pleasant and to retain more students in the program—may have the potential to evolve into a useful alternative educational setting for troublesome youths.** Despite its plausibility, at least from a behavioral perspective, the program serves primarily to illustrate the difficulty in implementing and evaluating an alternative school that ameliorates adolescent problem behavior and improves achievement. In its current form, this program model is not a solution to the problem of the segregation of academically less competent and troublesome students from the mainstream.

The Compton Action Alternative School (CAAS) took a different approach to providing schooling to adolescents who were troublesome and slow learners in school and highly delinquent according either to self-reports or arrest indicators. (An evaluation was reported by Gottfredson, 1986.) The youths involved in this quasi-experiment were drawn from an area of extensive gang conflict, most were associated with a gang, and relatively few lived in intact families. The program's implementers applied what they called "personalized education," with affective, behavioral, and scholastic aims. The range and intensity of personal interaction between students and teachers was far greater than that typical of most public schools, especially for students like those involved in CAAS. Although the program had other distinctive features—including a sensible instructional approach, a broadened range of rewards for students, paid work roles for students in the maintenance of the school, and parent activities—it is probably this personal interaction that was most distinctive about the program.

Youths were randomly assigned to CAAS or a control group in batches, with unequal probabilities of assignment in each batch. Checks showed that the treatment and control groups were not equivalent, making it necessary to use complicated statistical procedures to discern whether outcome differences were due to program participation or to preexisting differences between the groups.

If one could have complete confidence in the results, they would imply that this was a remarkably effective program that altered a number of student risk factors for delinquency and reduced drug involvement among members of the treatment group. More specifically, after making statistical adjustments, CAAS participants thought of themselves as more able, perceived their parents as emphasizing education more, had higher educational expectations, more attachment to school, more belief in conventional social rules, more positive self-concepts, less rebellious attitudes, spent more effort on school work, worked more, and used fewer drugs according to self-report than did the control group. No significant difference was found between the two groups in self-reported variety of delinquent behavior or on a measure of delinquent behavior based on arrest records. **It is important to note several features that make the CAAS quasi-experiment grounds for experimental replication rather than for crime policy.** The evaluation was based on small samples; it examined only one realization of the program; there is only spotty information about the actual day-to-day operation of the program; and there is reason to question the validity of the self-report measures of delinquency and drug use for this sample.

There is no evidence that the CAAS program did any harm, and the preponderance of the evidence suggests that it was beneficial. After making statistical adjustments for preexisting differences between the treatment and comparison groups, there were no differences between the groups in days in school, absences, grades, suspensions, expulsions, or grade-

to-grade promotions. This alternative school seems to have been a placement for troublesome students that they liked better than they would have liked regular school.

Alternative schools vary in their nature, student composition, structure, and purpose. There is not yet a cumulative body of scientific evidence about their effects. Because school systems, especially urban school systems, often feel compelled to provide such alternatives for unruly adolescents, the development of such knowledge is important. School systems implementing such programs have an ethical obligation to assess the efficacy and potential unintended consequences of their alternative schools.

Peer Group Interventions. Peer group interventions to reduce the risk of delinquent behavior are suggested by the observation that youths who engage in delinquent behavior tend to have delinquent friends. One kind of peer group intervention is derived from Guided-Group Interaction (GGI; Bixby and McCorkle, 1951; Vorrath and Brendtro, 1974). GGI aims to develop a group using free discussion in an open atmosphere and assumes delinquents must learn to conform to conventional rules by gaining more social rewards through conformity than through nonconformity. Derivatives of GGI, known as Peer Group Counseling, Peer Culture Development, or Positive Peer Culture have received widespread application in schools. In some cases, enthusiastic claims have been made for the efficacy of these programs in reducing delinquent behavior. The evaluations of school-based peer group interventions involving GGI-like techniques have often been flawed, and those claiming to have shown positive effects are possibly misleading. (Gottfredson, 1987, reviewed this literature.)

In at least one reasonably-sound evaluation, the peer group intervention may have increased rather than decreased the delinquent behavior of participating

adolescents. **There is no credible or consistent evidence that such peer group interventions are beneficial, and there is some evidence that they occasionally have unintended negative effects.** Such programs should be applied only in the context of careful experimentation involving clear hypotheses about ways to improve the efficacy and beneficial nature of the intervention. In contemplating future interventions based on the rationale that peer group norms foster delinquent behavior, it may be useful to seek ways to avoid delinquent peer interaction entirely rather than to attempt to modify its nature.

Individually-Targeted Interventions. Unlike elementary schools where students usually have a single classroom teacher for most of the school day, middle and secondary schools provide a more complex environment for students in which no identifiable teacher may have overall responsibility for the education of a student. A student can fall through the cracks in these schools. Denise Gottfredson recently reported on an experiment in which "marginal" students—the 10% of students whose school records indicated the greatest academic and behavioral problems—received special services from a school specialist with responsibility for identifying their needs and helping to arrange to have those needs met in the school and the home (D. C. Gottfredson, 1986b). Program implementers sought to improve student self-esteem and attachment to school, as well as to reduce the risk of school failure and delinquency.

In a diagnostic phase, specialists used detailed information about students' performance on achievement and competency tests, school grades, and disciplinary difficulties to specify behavioral treatment objectives and to develop academic, counseling, and advocacy services directed at these objectives. For example, specialists engaged in direct tutoring and interacted with parents or teachers to get their assistance in

implementing behavioral plans for students. Standards for the quality and frequency of contact with students were established and monitored.

A large-sample true experiment (with random assignment) was used to evaluate the intervention; differences observed between the treatment and control groups were likely to have been due to the intervention, and the sample sizes were large enough that educationally-meaningful differences would be likely to be detected by the statistical tests applied. The intervention increased the percentage of twelfth-grade participants who graduated (from 42% to 76%), slightly increased the percentage of students in lower grades who were promoted to the next grade—but not dependably each year—and it slightly increased performance on standardized achievement tests. Evidence also implied that the intervention increased treatment students' drug use according to a self-report measure in one of seven schools implementing the program.

Despite some positive effects of the program, it did not produce all of the objectives sought. As Denise Gottfredson put it,

> The [intervention] was not successful at improving student self-concepts, attachment to school, or at decreasing delinquent behavior among the targeted students. It failed to reach its objectives in part because the quality of services varied considerably from school to school. Target students in the only school that implemented the student services up to the intensity standards engaged in significantly less delinquent behavior during the 1981-82 school year . . . [The application of what—for a typical school system—are] intensive services to marginal students appears not to have reduced delinquent behavior, at least not in the short run (D.C. Gottfredson, 1986b).

This targeted intervention, which was costly and probably exceeds the resources that a typical school system is likely to devote to such a program, had detectable

beneficial effects but, with the exception of graduation rates for twelfth-graders, they were small.

School Improvement Programs. **Problems of academic failure and adolescent problem behavior are not randomly distributed across schools; some schools experience much higher rates of these problems than do others.** There is evidence that rates of disorder and academic failure are not due solely to the demographic composition of schools but also to their climates and practices (Gottfredson and D. C. Gottfredson, 1985; Rutter, Maughan, Mortimore, and Ouston, 1979). Schools with clear, fair, firm rule enforcement—and schools with a climate that emphasizes and rewards good academic performance—are usually more orderly and appear to do a better job of restraining students from misconduct.

This evidence suggests that interventions in disorderly schools to improve school climates and disciplinary practices may be helpful. Such interventions are most needed in urban schools with much disorder. The national evaluators of Follow Through correctly described a problem that school improvement programs will face:

> The organization and operation of a big city school system may pose a major problem for the implementation of new educational approaches. Characteristics of large city systems, which are either not present or are present to a lesser extent in other cities and which may make the delivery of a . . . program difficult, include high teacher turnover, teacher strikes, formal negotiations over teacher contracts and the bureaucracy generally associated with large school systems (Stebbins et al., 1977, Vol. A).

Some experience implies that schools differ in their amenability to school improvement or organization development interventions (see Gottfredson and D. C. Gottfredson, 1987; Fullan, Miles, and Taylor, 1980).

Such things as high morale, a spirit of collaboration and open communication among faculty and administrators, and the lack of a history of failed innovation all make it easier to implement changes or improvements in schools. **It is in the most disorderly, demoralized schools (that most need school improvement programs) that the same conditions that make education difficult and unpleasant make it hard for organization development workers or school personnel to implement innovations.**

Nevertheless, there are examples of school improvement programs that have been implemented in extremely difficult schools. In one example, Denise Gottfredson and her colleagues used a specific, structured organizational development approach to improve discipline in a middle school serving an inner-city, predominantly black community. (An evaluation of this program is reported by D. C. Gottfredson, 1988, the structured organizational development approach is described by Gottfredson, 1984, and Gottfredson and D. C. Gottfredson, 1987.) Census data showed that the school's catchment area was characterized by a high percentage of female-headed households, persons in low-status occupations, and families below the poverty level. A school climate survey showed that teachers were victimized at a rate higher than 95% of the schools in the norming sample for the survey, and that teacher morale was low. The same survey showed tension and mistrust between faculty and administrators, high levels of classroom disorder, and frequent punishment of students.

The intervention involved composing teams of teachers, administrators and other staff to identify and overcome obstacles to the implementation of several innovations aimed at increasing school orderliness and students' chances for success. Few obstacles were overcome on the first try, but the team sought to learn why their plans were not working and to renew

their efforts. By the third year of the project, the teams had implemented improved classroom management and instructional procedures, revised school-wide discipline polices and practices, and implemented several innovations to increase parent involvement and decrease student alienation.

An evaluation showed that the school as a whole became safer and the classrooms more orderly over the course of the project, according to survey data that paralleled the data used earlier to diagnose problems. Students' self-reported delinquent behavior also declined significantly, and the improvement in student behavior was accompanied by significant improvements in student attitudes and experiences. The most dramatic improvements were on the survey measures of organizational health. Teacher morale rose dramatically, and teacher reports of planning and action in the school also rose; teachers' perceptions of the administration became much more positive.

One might argue that something other than the organization development intervention brought about these improvements in the school. But there were no major changes in the school's demographic composition, and the school had the same principal throughout the project. Although some unknown influence or artifact is a possible explanation, **the most likely explanation for the improvement is that the structured intervention worked to implement improved school practices. The school environment became more *competent* in regulating student behavior.**

Another example of an effective school improvement intervention is a school-based delinquency prevention program in seven Charleston, South Carolina, middle and high schools (with control schools in the same school district). This program brought about a small but measurable reduction in delinquent behavior and misconduct. Students in participating schools were

suspended less often, reported fewer punishing experiences in school, and less involvement in delinquent and drug-related activities than students in comparison schools (D. C. Gottfredson, 1986b). This project used a structured approach to school improvement; a team framework for managing innovation; a policy review and revision component aimed at instruction, classroom management, and discipline; and school-wide academic and school climate innovations. The evaluation was limited in the information it produced about which aspects of the program were most important, and delinquency data from official records would have been valuable supplements to the school records and self-reports used. (For other school improvement interventions with positive results see D. C. Gottfredson and Cook, 1986a.)

Carefully-studied school improvement programs with measurable effects on adolescent problem behavior are in short supply. **On the basis of the available evidence, such programs show promise in coping with some multiple problems faced by many urban schools. These interventions are time and talent intensive, and they are harder to apply in the schools that need them most.**

Special Classes or Curriculum. Middle and secondary schools divide up their school days into classes, and it is class attendance that occupies most student time in school. It may seem natural for schools to use the vehicle of its classes and curriculum to apply an educational intervention that is helpful in reducing problem behavior.

A program run in Pasadena (California) schools altered the curriculum and teaching strategies in a combined English and social studies program and produced results that look promising (D. C. Gottfredson and Cook, 1986b.) The curriculum was highly structured and included segments on coping with authority, responsibility, family problems, and the justice system. It used a two-hour block of time,

making possible field-work activities, community work, and other engaging activities. The quasi-experimental evaluation of this program showed increases in attachment to school and academic success, and it showed decreases in delinquent behavior according to self-reports. Whether a replication would show the same results is not known.

Experiments with high-quality, classroom-based curriculum and instruction have some plausibility. More evidence about their effects—and information about the ways instructional design and delivery in middle and high schools affects risk factors for adolescent problem behavior—is needed.

What Could Be Done?

The record of accomplishment and the state of cumulative knowledge about education and delinquency suggests several propositions:

1. Adolescent problem behavior is a stable phenomenon, and it is unlikely that *any* short-duration intervention will greatly influence the frequency or extent of delinquent behavior (or greatly improve academic performance) long after the intervention has ended.

2. Carefully designed and implemented educational interventions in the pre-school years, in the elementary grades, and in secondary schools show beneficial outcomes—at least for a while.

3. Structured methods of school improvement have potential for improving schools by helping them put better instructional, classroom management, and disciplinary practices in place.

4. Intensive, high-quality educational and behavioral programs—applied early and continuing throughout the entire school

career of youths at high-risk of educational failure and other problem behaviors—would likely produce substantial reductions in school misconduct and delinquency and substantial improvements in learning and school completion. The effects of such programs may be cumulative.

5. The fade-out effects typically observed for early educational interventions are to be expected, and longer-term benefits sometimes observed may be due in part to improvements in the educational treatments or environments to which program participants were exposed later in their school careers.

6. Some practices common in American education—special education assignments, pull-out programs, grouping troublesome students together—may typically do more harm than good for the individuals exposed to them (despite any value they have in making instruction easier in classrooms from which the individuals are removed.)

The first proposition is especially important. The enduring nature of individual differences associated with slow progress in school and troublesome conduct implies, as Alan Kazdin has suggested, that it is incorrect to conceptualize the task of intervention as a time-limited one (Kazdin, 1987). Long-term management of behavioral and educational difficulties is also implied by the enduring nature of the family, community, and peer-group environments that youths inhabit. **These continuing environmental influences combine with differences in abilities and personal dispositions to produce regularity in behavior. The idea that long-term educational and behavioral *management* is required to restrain high risk youths from misconduct and facilitate their educational development is a departure**

from the ideas underlying the Head Start programs and delinquency prevention programs more generally. Early intervention to ameliorate disadvantage is useful, but early intervention combined with continuing intervention may be required.

Continuing management of behavior will require attention to the environmental influences of school at all points in educational careers. This management perspective seems more realistic than the search for one-shot interventions, and it is likely to be more productive in the long run. This management perspective implies that changes to increase the competency of educational *environments* is required—involving changes in the management of student conduct and learning. Among such changes might be reductions in the use of extended periods of "in-school" as well as out-of-school suspensions that disrupt the continuity of instruction for students having difficulty adapting to classroom environments, extending the period of time allowed for subject matter mastery beyond nine months for students who do not achieve criterion performance in that period of time, and composing groups for cross-age or cross-grade instruction as an additional way of coping with student heterogeneity. **Applying this perspective will require a commitment to the education of all but a very small fraction of students, not just the students whom schools now find it easiest to serve.**

An obvious feature of American education is the segregation of students by socioeconomic status and race. This segregation is today largely a result of residential segregation, and it results from a mix of social policies and individual choices that promote such segregation. **A consequence is that entire student populations are at elevated risk of failure and delinquent behavior, and that the schools that serve these populations are often demoralized organizations that are difficult**

to improve. Demoralized and disorderly schools are perceived as such, and these perceptions join with other stereotypes in further exacerbating problems of residential and school segregation and contribute to a downward spiral of demoralization and disorder. **Anything that can be done to interrupt this spiral is likely to be helpful.**

Some Opportunities to Improve American Education

From time to time, promising opportunities arise. The War on Poverty era provided such opportunities, and one useful product of the legislation enacted was that it allowed the assessment of the effects of some of the social programs then begun. **In recent years, there has been much less political emphasis on solving large problems, and there has been even less interest in programmatic efforts to devise solutions.**

An opportunity to do some good through legislation is now before us. There is little question that the $3.9 billion or so to be spent on Chapter I programs under the Education Consolidation and Improvement Act now being considered in the Senate will not be spent as effectively on compensatory education as it might be (Slavin, 1987b). The current structure of Chapter I—whether intended or not—encourages school systems to apply interventions that are easily recognized as targeted at disadvantaged students. Pull-out programs are easily recognized as targeted; programs to improve the school or apply classroom instructional practices that benefit disadvantaged students are not so easily recognized. It is important that the new legislation remove this barrier to more effective educational practices. In addition, the fraction of Chapter I money now spent on the evaluation of the program is not well spent. As Robert Slavin has pointed out, most of the programs known to be effective for disadvantaged students are old—developed in the 1960s and early 1970s when federal money was spent for program develop-

ment. **If only 1 penny on the dollar were spent for long-term research and development programs, that would be $39 million a year spent to develop career-long educational programs that are required to improve American education for high risk youths.** Such a research and development program would almost surely be more productive than the current Chapter I evaluations.

Improvements in American education would also come about if we could somehow induce school systems to use more of the knowledge we already have about effective and ineffective practices. **Avoid special education placement outside of the mainstream classrooms when possible; use more-effective rather than less-effective pull-out programs where such programs are used; use cooperative learning and direct instruction programs; apply cross-age strategies for reading instruction rather than retaining students in grade or allowing slow learners to fall further behind when instruction is at too-high a level; ensure that school rules are fair and clear and *actually followed* by disciplinarians in the school; use classroom management practices that preserve time for instruction, and make better use of the home in managing student behavior.** Nearly everywhere in American education insufficient attention is given to standards for the implementation of instruction and classroom management. Staff development and the supervision of instruction are often far too ineffectual to be expected to make a substantial difference in how instruction is conducted.

Improvements at the school level are possible. Structured school improvement interventions appear to have utility in bringing about beneficial changes even in the most disorderly schools, and there is a great deal of knowledge about educational technologies that

are not now fully used that can provide the content for school improvement efforts. **Public education in America is not now as good as it can be for several reasons: lack of financial resources, lack of talent, and the lack of a commitment to make the schools work for everyone. Today, diminished commitment to make the schools work for more students contributes to the lack of talent and resources.**

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Schools and Delinquency Prevention

David P. Farrington

Gary Gottfredson's paper is an impressive, scholarly, wide-ranging review. While it focuses particularly on the role of the school in delinquency prevention, it also discusses other important factors, such as individual differences in impulsivity, and family and peer group influences. There have been exciting developments in research on school prevention in the 1980s, and Dr. Gottfredson is unquestionably one of the leading researchers in this field. **His paper raises many important issues, but the main argument that shines through it is that the school offers more promise for delinquency prevention than the family, the peer group, or the juvenile justice system. This is a very important but highly contentious issue, and consequently it is one on which I will focus.**

School Behavior and Delinquency

The emphasis in Dr. Gottfredson's paper is on delinquent acts—theft, violence, vandalism, drug use, and so on—committed *outside* schools. There have also been a number of books on delinquent-type behaviors *inside* schools (e.g. Baker and Rubel, 1980; Gottfredson and Gottfredson, 1985; McPartland and McDill, 1977; Wenk and Harlow, 1978). **How and why delinquency inside schools is related to delinquency outside is an important question.** For example, assuming consistency in behavior, delinquent persons may commit delinquent acts in many different settings. Alternatively, some persons may commit delinquent acts inside but not outside schools, if such acts are caused by factors specific to the school. Another possibility is that delinquent acts

committed inside schools may precede and lead to delinquent acts committed outside.

I would be less cautious than Dr. Gottfredson in concluding that antisocial behavior in first grade predicted later delinquency and crime. Spivak (1983) followed up over 600 kindergarten children from Philadelphia, while Ensminger, Kellam, and Rubin (1983) followed up over 1,200 first grade children from Chicago. Spivak showed that teacher ratings of defiance, disrespect, disturbing the class, and impatience in kindergarten and first grade significantly predicted the number of police contacts up to age 18. The majority of the frequent offenders—those with four or more offenses—had been rated as badly behaved by their teachers in first grade. Ensminger, Kellan, and Rubin reported that their teacher ratings of aggressiveness of first grade boys significantly predicted self-reported offending by these youths at age 15. Nearly half of those who had been rated moderately or severely aggressive were among the most frequent offenders, in comparison with less than a quarter of the remainder of the sample. The key problem is to specify the causal chain that leads from antisocial behavior at age 6 to delinquency in the teenage years.

Theoretical Interpretations

As Dr. Gottfredson points out, it is clear that scholastic failure, a disliking for school, truancy, and frequent punishment in school are all significantly related to delinquency. It is less easy to distinguish between causal chains and developmental sequences, to determine which risk factors are measuring causes and which are not, and to establish causal order (e.g. Phillips and Kelly, 1979). For example, scholastic failure may cause a disliking for school, which in turn may produce two consequences: antisocial school behavior and truancy. Antisocial school behavior may cause frequent punishment and may develop into delinquency as the student gets older. If this inter-

pretation was correct, a reduction in truancy would not cause any decrease in delinquency, whereas a reduction in scholastic failure would cause decreases in antisocial school behavior, truancy, and delinquency. **Recommendations for delinquency prevention should be based on causal theories.**

A number of classic theories of delinquency suggest that the school plays an important role. For example, Cohen (1955) proposed that boys committed delinquent acts because they were conforming to the standards of a delinquent subculture. Lower-class boys competed with middle-class boys in school according to middle-class standards. Lower-class boys were handicapped in this competition, because their parents were less likely to have taught them reasoning, middle-class manners, the avoidance of aggression, and the postponement of immediate gratification in favor of long-term goals. Consequently, they were likely to antagonize their teachers and fail in school. Faced with the problem that they could not achieve status according to the middle-class standards of the school, these boys solved this problem by joining a delinquent subculture, with standards in opposition to those of the larger society, in which they could achieve status. Cohen's theory explains why delinquency is associated with a lower-class environment, school failure, and certain methods of child rearing.

Dr. Gottfredson gives particular emphasis to social learning theory, which suggests that behavior is largely influenced by rewards and punishments in the social environment. He recommends that schools and families should cooperate in developing behavioral programs that involve rewarding and punishing different kinds of school behavior. I find these ideas both plausible and promising. Indeed, several years ago I reviewed behavioral programs in families, schools, and the community, and concluded that more research of this type was warranted (Farrington, 1979). The main problem with these programs in schools is that disrup-

tive rather than delinquent behavior is targeted—disruptive noise, turning around, getting out of seats, grabbing other students' property, and so on. It is clear that disruptive school behavior can be reduced by behavioral programs (e.g. Kent and O'Leary, 1976), but more research is required to establish whether changes in school behavior can be accompanied by changes in delinquency outside schools.

Differences Between Schools in Delinquency

Several projects have shown that the prevalence of scholastic failure, antisocial school behavior, and delinquency varies dramatically among schools, as Dr. Gottfredson points out. However, it is not clear that this variation should be attributed to differences in school climates and practices rather than to differences in the composition of the student body. As Wilson and Herrnstein (1985) pointed out, "it is remarkable and a bit dismaying, given the great attention devoted to schools as influences on delinquency, that so little effort has been made to find out if different kinds of schools lead to different behavior outcomes."

The most famous study of school differences in delinquency was carried out by Rutter, Maughan, Mortimore, and Ouston (1979) in London. They showed that differences between schools in delinquency rates were not entirely explainable by differences between schools in the social class and verbal reasoning scores of the students at intake (at age 11). They developed a measure of school structure, organization, and functioning ("school process"), but found that it was not significantly related to delinquency independently of intake factors.

Rutter and his colleagues showed that many aspects of schools were not significantly related to their delinquency rates: the age of the buildings, the number of students, the amount of space per student, the staff/student ratio, the academic emphasis (e.g. amount

of homework or library use), the rate of turnover of teachers, the number of school outings, the care of the school buildings, and so on. **The main school factors that were related to delinquency were the amount of punishment and (negatively) the amount of praise given by teachers in class.** However, it is difficult to know whether much punishment and little praise is a cause or a consequence of antisocial school behavior, which in turn might be related to delinquency outside school.

The research of Rutter and his colleagues does not show unambiguously that school factors influence delinquency. This is partly because of the small number of schools involved in the study (12), and partly because far more is known about individual risk factors in delinquency than about school risk factors. Because this was a pioneering study, important school risk factors may not have been measured.

The effects of going to different schools could be studied better in longitudinal research in which students were followed when they changed from one school to another. If a student at one school was compared with the same student at another school, school effects could be investigated while holding constant individual factors, and the before and after comparison would make it possible to resolve problems of causal order. Farrington (1972) carried out this kind of an analysis and found that school effects on delinquency were detectable but weak in comparison with individual difference factors.

The lack of knowledge about the precise ways in which schools promote or prevent delinquency makes it difficult to mount experiments aimed to reduce delinquency through changes in school factors. However, despite this lack of knowledge, such experiments are worth doing because they can resolve the ambiguities inherent in correlational research. If a change in a school factor leads to a reduction in delinquency, then it can be concluded that the factor was part of a casual chain leading to delinquency.

Dr. Gottfredson raises the key problem of what should be the primary aim of schools. There often seems to be conflict between education (interpreted in terms of scholastic knowledge, skills, and qualifications) and socialization (character-building or inculcation of good citizenship). It is often believed that, the more time and resources that are devoted to the disruptive minority of students, the more harm will be caused to the education of the majority who want to learn. This is why it can be argued that dropping out of school is not necessarily a bad thing, especially in the light of Elliott and Voss' (1974) convincing demonstration that dropping out tends to be followed by a decrease in delinquency. Dr. Gottfredson rejects this argument, partly because of his preference for socialization as the primary objective of schooling.

A related problem is whether the more antisocial and/or low-achieving students should be segregated from the remainder—in special classes or alternative schools—and whether tracking has desirable or undesirable effects. Prior research on tracking does not show that it affects delinquency (e.g. Wiatrowski, Hansell, Massey, and Wilson, 1982). Dr. Gottfredson argues against this kind of segregation, partly because of the likelihood of stigmatization and contamination, and partly because of research showing that retarded children make better progress in regular classes than in special education placements. However, it would be helpful to determine experimentally the effect of special placement on the delinquency not only of the antisocial and/or low-achieving students who are placed but also of the remainder.

A key issue in delinquency prevention is whether intervention efforts should be targeted on the students or on the schools, although these are not mutually exclusive

alternatives. This decision should be made in the light of solid knowledge about the role of individual and school factors in the causation of delinquency. As a practical matter, it is easier to evaluate interventions targeted on students because large numbers of students can be randomly assigned to different experimental conditions. It is rarely possible to study enough schools (or even enough school classes) to achieve the benefits of random assignment in ensuring that the experimental units in one condition are equivalent to those in another. In most projects, the unit of analysis should be the student.

Another problem is whether intervention efforts should be targeted on high risk schools and/or students or on the total population. Narrow targeting seems a more efficient use of inevitably scarce resources, but it raises the issues of the accuracy of prospective identification and of possible stigmatization. A great deal depends on the type of intervention. For example, given the link between scholastic failure and delinquency, it would be logical to aim to decrease delinquency by improving students' school performance. If a program to improve school performance was targeted on all students, all might improve, but then the *relative* scholastic failure of the low-achieving students might be unchanged. If delinquency depends on relative rather than absolute school failure, delinquency might not decrease. Hence, it might be better to target the program on the low-achieving students so that they could improve relative to the remainder.

Dr. Gottfredson raises the problem that intervention programs are hardest to implement in the most disorderly, demoralized schools that are most in need of them. This is a familiar problem since the highest-risk people with the greatest potential pay-off in terms of delinquency prevention are often the most resistant to any treatment. A better pay-off in practice may be achieved from the next strata of people (or schools), who are high risk but not the highest of all.

Family, Peer, and Juvenile Justice Interventions

Dr. Gottfredson's conclusion that schools offer the best prospects for delinquency reduction is partly based on his discussion of the difficulties of interventions based on families, peers, and the juvenile justice system. However, quite rightly, he prefaces this discussion by pointing out that delinquent behavior is not readily altered by easily-applied remedies. It would be a mistake to have high hopes of making a dramatic breakthrough in delinquency reduction by any method because (he argues) antisocial behavior is a relatively stable trait, and because both individual and environmental factors tend to be stable over time.

Dr. Gottfredson points out that some delinquency prevention projects based on families have been effective. However, this form of family intervention seems most useful in the least disorganized families, makes heavy demands on parents, and its long-term efficacy has not been demonstrated. Also, the contemporary political climate is not conducive to large-scale family interventions. Hence (he argues), while the family is the most important institution for socialization of children, the school is in a better position to implement effective interventions on the highest-risk children. However, similar arguments (about disorganized schools, heavy demands on teachers, long-term efficacy, and the political climate) could be raised against school interventions.

Peer group interventions, especially those for adjudicated delinquents, may increase the solidarity of delinquent peer groups or increase the influence of delinquent peers on each other, according to Dr. Gottfredson. However, there are some hopeful indications in the literature that peer group interventions can have delinquency-reducing effects. For example, Feldman, Caplinger, and Wodarski (1983) showed that antisocial boys placed in activity groups containing a majority of prosocial boys became less antisocial, in comparison with those in activity groups containing

all antisocial boys. The approach used by Telch, Killen, McAlister, Perry, and Maccoby (1982) in successfully reducing adolescent smoking could also be built on. They employed high school students to guide younger peers in developing counter-arguing skills to resist peer pressures to smoke, using modeling and guided practice.

According to Dr. Gottfredson, it is almost impossible for the juvenile justice system to reduce juvenile antisocial behavior. This is partly because the punishments do not follow the behavior with sufficient consistency, as required by social learning theory. However, the probability of antisocial behavior in schools being punished may also be low. Another reason why the juvenile justice system is ineffectual is because the more important individual, family, peer, and school influences are still there after treatment.

I thought that Dr. Gottfredson's dismissal of juvenile justice treatment was rather sweeping. Several well-designed experiments suggest that different treatments do make a difference to subsequent delinquency (Farrington, Ohlin, and Wilson, 1986). For example, Berg, Hullin, and McGuire (1979) investigated the effectiveness of social work supervision for juvenile truancy cases in Leeds, England. Truants were randomly assigned either to supervision or to a repeated adjournment (continuance) procedure, backed up by the threat of short-term institutional treatment if there was no improvement in school attendance. The follow-up showed that those who were supervised had higher truancy and higher delinquency rates than those who were adjourned, suggesting that threats of sanctions may have been more effective than social work counselling.

Preschool Prevention

Dr. Gottfredson reserves his harshest criticism for two projects directed by Schweinhart and Weikart in Michigan—the Perry Preschool Program (Schweinhart

and Weikart, 1980; Berrueta-Clement, Schweinhart, Barnett, Epstein, Weikart, 1984) and the High/Scope preschool curriculum study (Schweinhart, Weikart, and Larner, 1986). He argues that the claims made for the Perry program are excessive, that the results are presented in a way that sheds the best possible light on the program, and have a "now you see it, now you don't" quality. Even worse, the curriculum study has little scientific value, is irresponsibly reported, and the results are best regarded as a fluke (his words).

In my opinion, Dr. Gottfredson's criticisms of these projects are excessively harsh, and he seems to be judging them by much higher standards than he uses in judging other projects. The Perry research is important because it demonstrates, using an experimental design, that a preschool "Head Start" intellectual enrichment program applied to poor black children at age 3-4 had long-term benefits in increasing their school success and in decreasing their offending. As Dr. Gottfredson says, the numbers of subjects were small, and replication is desirable. However, to some extent, the curriculum study provided such a replication. More impressively, the consistency of the results obtained in the 11 projects reported by the Consortium for Longitudinal Studies (1983) shows convincingly that preschool intellectual enrichment programs have long-term beneficial effects on indicators of school success. In view of the well-replicated link between school failure and delinquency, it is not surprising that decreases in school failure should be accompanied by decreases in offending.

Dr. Gottfredson mentions the problem that many of the participants in the Perry experiment did not consent to have their juvenile police records searched. Nevertheless, according to Berrueta-Clement and his colleagues (1984), *all* subjects had their juvenile records searched. This search was anonymous, but the participants were divided into program and control groups so that it was possible to determine the juvenile delinquency records of both groups fully.

Similarly, all participants had their adult records searched.

The major result in this experiment was that 31% of the program group were arrested as juveniles or adults, in comparison with 51% of the controls, a statistically significant difference. The percentage differences for juvenile arrests only (16% versus 25%) and adult arrests only (25% versus 40%) were both substantial. These differences in prevalence could not have been explained by any difference between the groups in the number of high-rate offenders.

The results obtained with self-reports of offending at ages 15-19 are mostly in the same direction, but less impressive. When delinquent acts were weighted according to their seriousness, the program group had significantly lower scores at age 15 and almost significantly lower scores at age 19. Bearing in mind the fact that small numbers make it difficult to obtain statistical significance, these results seem worthy of note. The admissions of individual acts show that the main difference between the groups was that the program youth were less aggressive, as noted by Dr. Gottfredson. However, I would not agree with him that a scoring method based on the variety of offending would necessarily have been better than the frequency scales used. I have always found that the two types of scales are highly correlated (e.g. Farrington, 1973). In any case, extreme frequencies had little effect on the Perry self-report data because any number of acts greater than 5 was scored as 5.

I have re-read the curriculum experiment by Schweinhart, Weikart, and Larner (1986), and I cannot agree with Dr. Gottfredson that the results are irresponsibly reported. The researchers caution that "this report requires major restraint in its use and interpretation," acknowledge the limitations of the small sample size, stress the need for replication, warn readers that the results may not be generalizable beyond poor children at risk of school failure, and state that "one research

study alone does not justify drawing policy implications." Logically, if this article should have been rejected by the journal editor, then so should many articles published in behavioral and social science journals—including for example the pioneering work of Patterson, which is quoted approvingly by Dr. Gottfredson.

Obviously, it would be a mistake to place too much emphasis on the results of an experiment with 18 children in each group. However, it is not true that the higher self-reported delinquency scores of children receiving what Dr. Gottfredson terms the language-oriented program (actually a rather behaviorist, teacher-initiated program) are caused by a small number of two or three high-rate delinquents. Frequency diagrams published by Schweinhart and his colleagues show that nearly half (8 out of 18) of the children in this group had unusually high scores, in comparison with only one in the High/Scope consortium and two in the nursery school group.

I would give more credence to the Perry program than to the curriculum study, whose results are tentative and provocative rather than definitive, but I did feel that Dr. Gottfredson was unduly savage in his condemnation of both. Perhaps he was influenced by exaggerated and distorted claims in the mass media. **Especially bearing in mind the Consortium results, the Perry program gives us a rather strong glimmer of hope that delinquency can be prevented by preschool intellectual enrichment programs targeted on the most deprived children.**

Empirical Evidence on School Prevention

Dr. Gottfredson's paper is especially useful for his review of recent research designed to reduce delinquency through programs targeted on schools. He also reviews a number of programs whose effects on delinquency have apparently not been demonstrated, such as Follow Through, mastery learning, and cooperative

learning. Many of the results he quotes, obtained in projects directed by himself and his colleague Denise Gottfredson, have not been published and so I cannot comment on them in detail. The ACE and CAAS alternative school projects sound interesting, although I note that the ACE students reported more delinquency than comparison students, and that the CAAS students were not significantly different from controls on self-reported or official delinquency. Gold and Mann (1984), in an extensive study of several alternative schools, also found that they had no effect on self-reported delinquency, although they led to a decrease in disruptive school behavior. More success in reducing delinquency was obtained with the "structured organizational development approach" to improve discipline, and in the Pasadena curriculum study.

I can comment on the Charleston school prevention experiment published by Denise Gottfredson (1986). This was one of a series of exciting delinquency prevention experiments in schools, funded by the Office of Juvenile Justice and Delinquency Prevention in the early 1980s, which unfortunately was affected by drastic cut-backs in funding. The Charleston study shows that a program aimed to decrease academic failure experiences of students and to increase their social bonding, commitment, and attachment to school (achieved by making schools more democratic and classroom management practices fairer) can lead to small decreases in self-reported delinquency. These results are a useful starting point for further research building on them. As Dr. Gottfredson notes, further research is required to identify which components of the program were the most important.

The recent school experiments were inspired by the social development model of Hawkins and Weis (1985), which suggests that student involvement in constructive learning activities and consistent rewards for successful participation can prevent delinquency by fostering attachment to school. David Hawkins and

his colleagues in Seattle have also carried out some important school prevention experiments inspired by this theory. For example, Hawkins, Doueck, and Lishner (1986) tested an instructional package of proactive classroom management, interactive teaching, and cooperative learning. They found that low achievers in experimental classrooms showed more bonding to school and less school misbehavior than low-achieving controls. However, the two groups did not differ in self-reported delinquency.

Conclusions

By concentrating on the more contentious issues raised by Dr. Gottfredson's paper, I have probably given the impression of more disagreement between his views and mine than is in fact the case. In an attempt to clarify this, I would like to emphasize that I agree with the vast majority of his statements. **I disagree primarily on two important issues: the value of the Perry Preschool Program and the over-riding importance of the school as a site for delinquency prevention efforts.**

In contrast to the negative results of earlier school experiments (e.g. Meyer, Borgatta, and Jones, 1965; Reckless and Dinitz, 1972), recent school experiments—especially those by Dr. Gottfredson and his colleagues—provide glimmers of hope that delinquency can be prevented by changing school climates. More research is needed to establish precisely which aspects of schools are linked to delinquency and which should be targeted in delinquency prevention experiments. Similar hopes for delinquency prevention can be justified on the basis of the research by Schweinhart and Weikart on preschool intellectual enrichment programs. However, it does not follow from these results that schools or preschools are better sites for delinquency prevention efforts than families, peer groups, or the juvenile justice system. **Dr. Gottfredson's scholarly review is an important con-**

tribution to the literature, but it does not shake my belief that, at the present state of knowledge, prevention experiments in *all* these areas are both warranted and needed.

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Examining the Potential of Delinquency Prevention Through Alternative Education

Denise C. Gottfredson

What *is* the school's potential for reducing delinquency? The Office of Juvenile Justice and Delinquency Prevention (OJJDP) explored the efficacy of school-based delinquency prevention through a large-scale initiative between 1980 and 1983.

The premise for OJJDP's Delinquency Prevention through Alternative Education Initiative was that the school has a role in preventing delinquency. Social control theory (Hirschi, 1969) suggests that commitment to educational or other conventional goals, attachment to teachers and the school, and belief in rules restrain individuals from delinquent behavior. Success experiences in school may build commitment and attachment; and clear and consistently enforced standards for appropriate behavior in school may provide external consequences that influence behavior as well as a basis for self-monitoring and self-reinforcement of appropriate behavior (Bandura, 1977). These rationales, coupled with the observation that delinquent behavior is associated with a number of school-related problem behaviors, formed the basis for the initiative (Hawkins and Wall, 1979).

OJJDP funded eighteen different delinquency prevention models in fifteen cities. It targeted schools serving grades 6 through 12 in relatively high-crime communities, with high rates of delinquency, dropout,

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suspensions, expulsions, absenteeism, and youth unemployment. Projects participating in the program sought to decrease dropouts, suspensions, expulsions, and truancy; increase attendance, academic success and graduation rates; and improve the early post-schooling work, vocational training, and postsecondary education experiences of youths. These changes were expected to reduce delinquent behavior.

The Projects

Seventeen demonstration projects were included in our evaluation of the Initiative. Table 1 shows the names, locations, award amounts, and durations of the seventeen alternative education projects and the primary missions of the implementing organizations. Nearly $13.5 million was awarded to these seventeen organizations over the three-year period, and the award amounts to individual organizations ranged from $318,000 to $1.5 million. The implementing organizations were diverse, including community-based organizations, public school systems, and technical assistance providers.

The program models were also varied. They ranged from secondary prevention programs that provided services to high-risk youths outside of the regular school, to interventions within the school that targeted high-risk youths for special services, to primary prevention efforts that altered school climates to reduce the risk of delinquency for entire school populations. The services provided ranged from purely educational interventions, such as test-taking skills instruction and computer-assisted instruction, to "affective" services such as counseling or "rap" sessions, to work-related services such as job-skills training and job placement.

Highlights of the Initiative's Outcome

I will summarize two distinct kinds of outcomes. The first kind is changes in the behavior and attitudes of typical students and teachers in the participating schools and in their reports about their school en-

TABLE 1
Prevention Project Names, Locations, and Award Amounts

Organization Name	Location	Amount	Duration (months)	Primary Mission of Organization
Prevention of Delinquency through Alternative Education	St. Croix, Virgin Islands	$317,784	36	Education
Individualized Integrated Alternative Education (Otro Camino)	Playa Ponce, Puerto Rico	$857,096	36	Community development
Project PREP	South Bronx, New York	$1,498,967	36	Education
Compton Action Center — Youth Development Alternative School	Compton, California	$814,292	36	Community development
Peer Culture Development	Chicago, Illinois	$812,000	36	Youth development
Jazzmobile Alternative Education Arts Program	Harlem, New York	$668,019	24	Arts education
George I. Sanchez Alternative Education Program	Houston, Texas	$706,142	36	Social justice
Prevention of Delinquency through Alternative Education	Kalamazoo, Michigan	$358,206	36	Post-secondary education and research
Positive Action through Holistic Education	Charleston, South Carolina	$1,151,508	36	Education
Alternative Education Program	Hayward, Wisconsin	$539,778	24	Tribal government
Project RETAIN	Chicago, Illinois	$1,088,983	24	Education
Student Training Alternative Through Urban Strategies	Pasadena, California	$797,169	36	Law-related education
Prevention of Delinquency through Alternative Education	Sewell, New Jersey	$803,601	36	Technical assistance, educational service
Milwaukee Youth Employment Center	Milwaukee, Wisconsin	$1,156,105	24	Vocational rehabilitation
Plymouth-Canton Alternative Programs	Canton, Michigan	$599,816	36	Education
Academy for Community Education	Miami, Florida	$644,520	36	Human service delivery
Project Together	St. Paul, Minnesota	$495,765	31	Education

vironments over time. The second kind is the effects of the interventions on individuals targeted for direct services.

Population Outcomes

Tallies of School Change. Surveys of students and teachers conducted in the Spring of 1981, 1982, and 1983, allowed a comparison of school averages for a variety of measures of program goals and objectives. We counted the number of schools that improved, stayed the same, and went downhill on each measure for the periods 1981-1982 and 1982-1983.

Table 2 shows the results of these simple tallies. For nine of the ten measures of delinquency the results show less delinquency in the later than in the earlier year for both time periods. For both comparisons, the increases in school safety (both teacher and student reports) and reductions in teacher victimization are statistically significant.[1] Students' reports of gangs in school and crime in their communities also declined significantly from 1982 to 1983.

TABLE 2
Number of Alternative Education Program Schools that Improved and Regressed on Initiative's Goals: 1981-82 and 1982-83

Measure	Number of Alternative Education Schools					
	81-82			82-83		
	+	–	N	+	–	N
Total delinquency	11	8	19	23	16	39
Drug use	11	8	19	23	16	39
Serious delinquency	11	5	16	23	16	39
Victimization (student)	17	16	23	18	21	39
Gangs in school	14	10	24	28**	11	39
Safety (student)	18**	4	22	26*	13	39
Community crime	10	15	25	29**	10	39
Safety (teacher)	21**	4	25	28*	13	41
Victimization (teacher)	22**	5	27	28*	15	43
Classroom disruption	14	13	27	27	19	46

*$p < .05$
**$p < .01$

Note: Some schools are excluded from this table because of significant differences in school populations, sampling procedures or response rates from one year to the next. The number of schools on which the comparisons are based is as follows: 1981-82: 38 of the 65 schools surveyed; 1982-83 teacher comparisons: 47 of the 51 schools surveyed; 1982-83 student comparisons: 39 of the 51 schools surveyed. The first seven measures are based on student and the last three on teacher reports.

[1]*In these comparisons, statistical significance is estimated using the sign test. A comparison is statistically significant if the probability is less than .05 that the number of positive or negative changes observed could have arisen by chance were there no true difference from year to year.*

Similar tallies were made for a number of measures of program objectives and theoretical risk factors for delinquency. **More schools improved than regressed in both years on attendance and students' reports of educational expectations—two indicators of social bonding.** Also, student alienation declined in more schools than it increased. School attachment, belief, school rewards, and association with delinquent peers more often moved in the desired than in the undesired direction. The latter differences were not large, but they were consistent for both time periods. The results also suggested an increase in teacher commitment and job satisfaction over the course of the Initiative.

Some outcomes sought by OJJDP were not observed. These included increases in student participation in school decision making, practical knowledge (e.g., knowing how to find the right bus or balance a checkbook), parental emphasis on education, and the use of individualized education strategies.

These simple tallies provide a general summary of results for the entire Initiative. They are intended to provide a simple answer to the simple question, "Were beneficial outcomes achieved as a result of the OJJDP Alternative Education Initiative?" Despite the possibility that the changes observed may be due to other changes occurring at the same time these programs were implemented, the simple answer is, "probably yes."

Results for One School. **Our school-by-school examination of changes over the duration of the initiative revealed a number of schools that dramatically improved.** Milwood Junior High in Kalamazoo, Michigan is one of these schools. Milwood participated in an organizational change project to increase prosocial behavior by altering school structures—the curriculum, discipline practices, opportunities for student participation, and coordination across various student roles—to promote social integration. It was designed as a test of social

control theory using organizational change strategies to increase social control (Friday and Elrod, 1980). Among the changes implemented as part of this organizational change effort were increases in opportunities or student participation, a community outreach component that increased community involvement in school activities, a shift from formal to more informal mechanisms for dealing with troubled students, a "school-within-a-school" for marginal youths that was designed to provide more personalized attention, and a home-school liaison who monitored attendance carefully. Perhaps the most salient feature of the program was that all activities were planned and carried out by school staff. This *collective participation* promoted a sense of program ownership and staff commitment to the program philosophy, goals, and interventions.

Milwood students reported significantly less delinquency and drug use in 1983 than in 1981, and they also attended school more often, were suspended less often, and scored higher on standardized achievement tests. The students also came to report more positive self-concepts, greater attachment to school and belief in rules, and less rebellious attitudes and alienation over the course of the project (Gottfredson and Cook, 1986). This pattern of results is consistent with the project's emphasis on increasing social control and with evidence about the strength of the project and its broad coverage.

The Milwood results provide a "best case" example of the potential for delinquency prevention through organizational change. Another successful program of organizational change was carried out by the Charleston County, South Carolina schools (Gottfredson, 1986). This project (PATHE) is described in Gary Gottfredson's paper earlier in this volume. The project was similar in many respects to the Kalamazoo project, but it was implemented in seven schools. The PATHE results, although not as dramatic as those from the Milwood

project, increase our confidence in organizational development approaches to delinquency prevention.

Results of Targeted Interventions

Most of the delinquency prevention projects in the OJJDP Initiative had at least one component directed at an identifiable target group of youths. These interventions were diverse. Some were directed at a highly selected group of high-risk individuals, some were directed at youths more representative of the general student population. Some involved altering the environment to which the target groups were exposed, others involved efforts to enhance the coping skills or ability of the individuals to adapt to the environment. The following paragraphs describe some of the results.

Promising Interventions. **The Compton Action Alternative School and Project STATUS showed most promise for reducing delinquency.** The evaluations of these projects showed significant reductions in one or more forms of delinquent behavior as well as in a number of risk factors for delinquent behavior. Gary Gottfredson (this volume) described the Compton Action Alternative School (CAAS). Briefly, this alternative learning center for troublesome students provided a friendlier, more personalized environment than the public schools. The personnel of the center sought to provide their students with the warm and supportive environment that was assumed not to exist for these youths elsewhere. Youths assigned at random to this school reported less drug involvement than did the control group, and they reported higher levels of social bonding and more positive self-concepts than did the youths in the control group. Similar effects were not seen in the official delinquency data.

Project STATUS operated in one junior and one senior high school in Pasadena, California. The STATUS intervention for high-risk youths was a combined English and social studies class with a coordinated

law-related education curriculum. The law-related curriculum and innovative teaching methods were expected to prepare delinquency-prone youths to become responsible, productive citizens.

The class was a year-long experience, involving five units. The units covered different aspects of the individual in relation to society. The curriculum covered such topics as the function of school rules, decision-making processes in the school, informal codes of conduct and how these informal codes are translated into formal rules for behavior, the nature and function of social contracts, the family as a sociological and legal entity, and the criminal justice system.

The methods used in the class encouraged active participation. Students often visited community organizations, and guest speakers from the community frequently spoke to the students. Structured role-plays and simulations were common, and students frequently worked together in small groups. The level of participation was much higher than in other classes in the schools.

In both schools, program students reported significantly less delinquency than did control students. Records showed that court contacts were also lower for the program students, but these differences were not significant. **The program reduced negative peer influence and resulted in greater academic success, less punishing and more rewarding school experiences, and greater social bonding.** The positive results are most likely attributable to the changes in the classroom task structure—treatment students were more actively engaged in more constructive and conventional activities than were the control students.

Interventions with Mixed Results. Several of the projects had mixed results. Miami's Academy for Community Education (ACE; described earlier by Gary Gottfredson), like the Compton project, was an alternative school. But unlike the Compton project, it maintained strict standards for conduct and academic achievement, and was governed by a formal token

economy system. Youths who mastered the required academic material were placed in apprenticeship positions in local businesses. The evaluation of ACE implied that the program was successful at increasing commitment to education among a delinquent population, but that it simultaneously reduced attachment to school and *increased* delinquency.

The two strongest counseling programs—the PCD peer counseling intervention described in this volume by Gary Gottfredson and the Plymouth Student Service Center, which provided adult-led, transactional-analysis-style counseling in a semester-long class for academic credit, had what might be described as "now you see it, now you don't" effects: results for different semesters varied remarkably, some showing positive effects, some negative, and some no effects.

A program in the Charleston, South Carolina public schools which provided (a) supplemental tutoring; (b) close monitoring of academic progress, attendance and school conduct; and (c) "affective" services intended to increase bonding to the school increased academic success for the delinquency-prone youths it served. No effects on delinquent behavior or other risk factors for delinquent behavior were observed. Long-term follow-up of the participating youths is necessary to determine if increased educational success results in later reductions in delinquent behavior for the Charleston youths.

We also observed mixed results for a "school-within-a-school" model for high-risk youths implemented in two junior high schools—one in the Virgin Islands and one in Kalamazoo, Michigan. Both schools attempted to implement FOCUS, a program designed to provide a close, family-type atmosphere for students experiencing school difficulties. The model was designed for small classes of about 15 students. It used individualized instruction to help students improve in areas of academic deficiency, and frequent "family" group meetings to provide students an opportunity to discuss problems related to their academic and social develop-

ment. Both programs appeared to be implemented with considerable fidelity to the model as laid out by its developers. In the Virgin Islands, FOCUS students received higher grades and reported higher levels of belief in rules and less rebellious attitudes. But these results must be balanced against a near-significant difference on delinquency and drug use favoring the control students and against the results from the Kalamazoo project which suggested that the FOCUS participants' educational expectations and academic achievements declined as a result of the program.

Discussion

OJJDP's Alternative Education Initiative was successful in demonstrating that some school-based preventive interventions and treatment programs may reduce delinquent behavior. The schools in the Initiative became safer and less disruptive over the course of the Initiative. Students' reports of nonattendance declined in more schools than they increased, and expectations to continue schooling increased in more schools than they declined. Decreases in students' alienation and negative peer influence and increases in social bonding and rewards in school were also observed.

These positive changes did not occur with equal frequency across all prevention projects. The most consistent evidence of positive changes in school-level outcomes occurred for the Charleston and Kalamazoo projects. These projects focused on changes in the environment. Both projects undertook thorough efforts to systematically implement well-defined interventions aimed at altering the school environment. These efforts resulted in positive changes in school climate, including changes in known risk factors for delinquent behavior. Significant reductions in delinquency and disruption accompanied these improvements.

Evaluations of the programs directed at high-risk individuals implied that two of the programs resulted in consistent, significant reductions in delinquent behavior according to self reports. Other programs had no measurable effect on delinquent behavior, but are promising because they demonstrated positive effects on risk factors for delinquent behavior.

The results of our evaluation are not easily summarized, nor do they provide unambiguous guidance in preventing delinquency through direct interventions with identifiable youths. **We cannot conclude, for example, that alternative schools or alternative classes for high-risk youths are helpful or harmful.** We observed beneficial, benign, and possibly harmful alternative school and class models. We are struck by the diversity of educational climates in the various programs. **But the results of our evaluation leave us with a refined set of research questions and a general sense of the kinds of interventions that appear most promising.**

One feature common to both programs that successfully reduced delinquency is that they also increased more than one source of social control for the participants. The Compton experiment increased commitment to educational goals, attachment to school, belief in the validity of conventional rules, and involvement in constructive activities. The STATUS treatment increased students' attachment to school, involvement in constructive activities, and their success experiences in school. The programs that successfully reduced delinquency risk factors without achieving a measurable reduction in delinquent behavior achieved their academic objectives (i.e., they increased academic performance and persistence in school) but had no effect on attachment to school or belief in rules. The evidence from the Miami project especially supports the hypothesis that increasing educational commitment may not provide a sufficient restraint against delinquency. This intervention successfully increased its participants' educational credentials, and possibly their

persistence in school and school attendance. But the controlling project environment may have resulted in lower attachment to school and more involvement in delinquent activities among the school's participants.

The Peer Culture Development and Plymouth evaluations suggest that intensive counseling interventions for troubled youths may sometimes be harmful. These are the only projects that offered counseling as a regularly scheduled class for which students were granted credit. For both of these projects, we found evidence of increases in self-reported drug involvement (Plymouth and PCD) and other forms of delinquency (PCD only). These programs had in common a theory that examination of one's own attitudes, beliefs, and behaviors in the context of a peer group would lead to positive resolution of personal or interpersonal problems and acceptance of socially-acceptable norms of behavior. Both interventions attempted to help individuals adapt to the environment, to make the individual responsible for his or her own behavior, and to develop a supportive peer group. **The evaluation results suggest that this type of counseling intervention can backfire. It may lower attachment to prosocial others, increase alienation, and lead youths to increase their delinquent involvements.** But the results from the PCD and Plymouth projects are mixed, suggesting that counseling interventions may sometimes be harmless or even helpful. Near replications of these interventions are needed so that we may scrutinize the conditions under which the interventions are harmful and helpful.

Recommendations. Future investigations of the influence of alternative educational structures, arrangements, policies, and practices on delinquent behavior among high-risk youths should address the following questions: **Are the positive effects of the high-interest alternative class (as implemented in Project STATUS) or the per-**

sonalized education in a supportive atmosphere (as implemented in the Compton project) replicable? These projects should be replicated without substantial modification, and they should be replicated in several settings in the context of true experiments.

Under what conditions are counseling interventions for high-risk youths helpful and harmful? The PCD and Plymouth interventions should be examined for clues about elements that might have resulted in increased drug use among their participants, and refined accordingly. The refined programs should be tested in the context of true experiments, and the evaluations should more thoroughly examine the interpersonal and psychological effects of the programs.

Would strengthening the affective elements of programs that had demonstrable effects on academic outcomes result in a reduction in delinquency? The Charleston program should be modified to strengthen existing components, and the Miami program should be modified to add components to increase attachment to prosocial others, belief in rules, and involvement in constructive activities. These modifications should be evaluated in the context of true experiments.

What is the long-term effect of these alternative educational treatments on their participants? Treatment and control students in several of the projects should be followed up to assess the extent to which immediate effects on delinquent behavior were lasting and effects on risk factors for delinquent behavior resulted in increases or decreases in later delinquency.

More general recommendations have to do with the structure for demonstrations. **Successful delinquency prevention programming requires attention to theory and research in the design phase, clearly specified interventions,**

and careful program management to increase strength and ensure fidelity. Several of the OJJDP prevention projects were poorly designed, and several with plausible designs were poorly implemented. Project personnel need a structure for strengthening project designs and managing implementation. Furthermore, a realistic timeline is needed which recognizes that repeated trials are necessary to develop and refine programs. **Long-term (at least five years) *collaborations* between the implementing organizations and researchers are the most promising structure for facilitating program development. Only through true collaborative efforts will we accumulate the knowledge necessary to improve practice.**

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